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ABSTRACT

An annotated bibliography which presents approximately 300 references from 1951 to 1973 on the education of severely/profoundly handicapped persons. Citations are grouped alphabetically by author's name within the following categories: characteristics and treatment, gross motor development, sensory and motor development, physical therapy for the cerebral palsied child, neurodevelopmental (Bobath) method, cognitive development, behavior shaping techniques, self-care development, toilet training, and prelanguage, language and communication development. References usually contain author's name, title, source, date, pagination information and a brief abstract. (CL)

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ANNOTATED BIBLIOGRAPHY

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University of Washington

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I would like to express deep appreciation to everyone who helped with this bibliography, especially the graduate students of Marywood College, Pennsylvania, under the direction of M. Ellen Somerton and Donald G. Myers and the University of Washington Experimental Education Unit staff members.

The first edition of this Annotated Bibliography represents the beginning, and now continuous development, of materials that will be selected to improve the quality of education for the severely/profoundly handicapped.

Norris G. Haring
February 10, 1975

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I. CHARACTERISTICS & TREATMENT

Alpern, G. & Kimberlin, C. Short intelligence test ranging from infancy levels through childhood levels for use with the retarded. American Journal of Mental Deficiency, July 1970, 75, 65-71.

A short intelligence test for retarded children whose abilities ranged from infancy levels through childhood levels was devised. The results were given.

Altmann, R. Differential sensitivity of profound retardates to adults steady gaze. Psychological Reports, 1970, 27, 30-34.

This study dealt with ten ambulatory males, profoundly mentally retarded, who were sensitive to a steady gaze. Two types of behavior were elicited, avoidance and approach.

Angement, H. L. A frame of reference in the observation of institutionalized subnormals. Journal of Mental Subnormality, 1970 16, 107-112.

Interviews discussing the characteristics of 39 females and 61 males ranging in age from 8 to 12 years.

Baker, B. & Ward, M. Reinforcement therapy for behavior problems in severely retarded children. American Journal of Orthopsychiatry, 1971, 41, 124-135.

This article reported on a behavior modification program for severely retarded children. The aim of the project was the elimination of disruptive behavior problems through the use of positive reinforcement. The results of the study were assessed by intelligence and developmental testing and from independent behavior observations, and records kept by the staff.

Baumeister, A. A. & Foreland, R. Social facilitation of body rocking in severely profoundly retarded patients. Journal of Clinical Psychology, 1970, 26, 303-305.

The article presents two studies regarding the rate with which the severely retarded engage in body rocking as influenced by social context variations.

Bell, G. & Keardon, D. Effects of sedative and stimulative music on activity levels of severely/profoundly retarded boys. American Journal Of Mental Deficiency, 1970, 75, 156-159.

This study tests three predictions of the effects of musical stimulation on the activity levels of eleven 6 to 17 year old

boys, who are severely and profoundly retarded in institutions. The testing data is reported.

Bensberg, G. Teaching the profoundly retarded self-help activities by behavior shaping techniques. American Journal of Mental Deficiency, 1965, 69, 674-679.

This study described a project in which profoundly retarded subjects were taught self-care skills. A procedure using operant conditioning was employed to bring about the initial modification of behavior in the subjects. Methods and results of the study are given.

Bradtke, L. Intensive play: A technique for building affective behaviors in profoundly mentally retarded children. Education and Training of the Mentally Retarded, 1970, 7, 8-13.

This article discusses the use of intensive play in working with profoundly mentally retarded children. In the study intensive play was used to develop responses to close body contact and physical stimulation and to overcome the fearfulness and unresponsiveness of the subjects. Techniques which were employed and evaluation of the progress are presented.

Carlisle, L. & Shinedling, M. Use of the Slosson Intellignece Test with mentally retarded residents. Psychological Reports, 1970, 26, 865-866.

The Slosson Intellignece Test was administered to 122 severely/profoundly retarded, institutionalized males and females who had previously been given the Stanford-Binet, Kuhlmann Test of Mental Deficiency. Test correlations are given.

Chandler, P. & Luckey, R. Demonstration habilitation and self-care nursing projects of multi-handicapped retardates. Mental Retardation Journal, 1968, 6, 10-14.

A case study of a multiply-handicapped, profoundly retarded child which includes the characteristics of the child, his level of functioning, the training techniques employed, and the improvement made.

Daniel, W. Abberant serum protein inheritance in a patient with a ring D chromosome. Pediatrics, 1970, 46, 120-122.

A case study of a microcephalic boy classified as profoundly mentally retarded.

Dilley, G. Retarded women teach self-help skills. Hospital and Community Psychiatry, 1969, 20, 154-155.

The institutional transference of ten profoundly retarded women to a moderately/mildly retarded environment resulted in notable accomplishments.

Donoghue, E. Some factors affecting age of walking in a mentally retarded population. Developmental Medicine and Child Neurology, 1970, 12, 781-792.

A study of the walking age in 336 severely/profoundly retarded children.

Guralnick, M. A language development program for severely handicapped children. Exceptional Children, 1972, 39, 45-49.

A language development program for severely retarded children is described. The subjects were eight severely retarded children whose vocabularies consisted of isolated words and occasional phrases. The program was conducted by ten undergraduate college students who spent from 3 to 6 hours per week working with the children. The program and procedures are described with results and implications included.

Lebedev, B. Case study. Journal of Neuropathology and Pediatrics, Volume 70, 1571-1574.

A case study and diagnosis of a 3½ year old girl with a chromosomal deficiency leading to the "cat's cry" syndrome. The child was profoundly retarded, arrested physical development, microcephalic, epicanthus and other physical atypicalities.

Martin, G. & Treffry, D. Treating self destruction and developing self care. Psychological Aspects of Disability, 1970, 17, 125-131.

A case study of a retarded self destructive girl and the successful treatment used.

Ribas-Mundo, M. Genetical factors in mental retardation. Anvario de Psicologia, 1970, 1, 29-43.

This article classifies the genetic causes of mental retardation and gives a brief description of the resulting retardation.

Richards, B. Ring chromosome 18 in a mentally retarded boy. Journal of Mental Deficiency Research, 1970, 14, 174-186.

A case study of a profoundly retarded 14 year old boy with reduced head size, micrognathic, oblique palpebral fissures and club feet.

Robinson, H. & Robinson, N. The mentally retarded child, a psychological approach. New York: McGraw Hill, 1965.

A brief discussion of the characteristics of the profoudly retarded and their causes given.

Sullivan, J. & Batarseh, G. Educational therapy with the severely retarded. Training School Bulletin, 1973, 70, 5-9.

Description of a project in which thirty severely retarded children were given educational therapy to show that it can make the severely retarded more alert and less dependent on others for care and entertainment. Methods of therapy, results and conclusions are given.

Talkington, L. Use of a peer modeling procedure with severely retarded subjects on a basic communication response skill. Training School Bulletin, 1972, 69, 145-149.

In this study several retarded subjects were given basic communication training using modeling procedures. Methods and results of the study are provided. The authors suggest that a modeling procedure is feasible for the training of appropriate responses to verbal cues.

Thomas, E. & Yamamuto, K. Sex ratios found in various types of referred exceptional children. Exceptional Children, 1970 36, 621-625.

The study gives the statistics of the number of male and female children classified as exceptional children. A portion of the article is devoted to the sex ratios of the profoundly retarded child.

Thompson, T. Development and maintenance of a behavior modification program for institutionalized profoundly retarded adult males. Psychological Aspects of Disability, 1970, 17, 117-124.

Report on a behavior modification program based on positive reinforcement of adaptive behavior and extinction of maladaptive behavior.

Valentine, A. & Maxwell, C. A clinical treatment of imipramine enuresis in the profoundly retarded child. Journal of Mental Subnormality, 1968, 14, 84-90.

Article cites a study of 16 profoundly retarded children who received a non-blina trail of imipramine for enuresis and showed a significantly less nocturnal urinary incontenance on redication.

Wright, J. Behavior modification with low level retardation. Psychological Record, 1970, 20, 465-471.

A case study of 15 severely and profoundly retarded children who were given social reinforcers (verbal and physical attention) for positive behavior and no reinforcement for negative behavior.

II. GROSS MOTOR DEVELOPMENT

Allen R., Burnette, W., Colaman, E., Grimm, J., Holland, R.L., Jessup, H. M., Mumford, B., Noonan, W. Jr., Stein, J., Sullivan, M. E., & Vitacco, A. G. Physical activities for the mentally retarded: Ideas for instruction. Washington, D.C.: AAMPER, 1968.

Explains basic movement patterns, fundamental motor skills, initial perceptual development, primitive conceptual formation, and development of self-awareness.

American Association for Health, Physical Education and Recreation. Psychomotor function, physical education, and recreation for the severely and profoundly retarded. Washington, D.C.: AAMPER, 1966.

The book explains various psychomotor skills, and physical education for these students. Such things involved are physical fitness programs and developmental activities.

Anderson, R., Bergowski, E., & Blodgett, W. H. A code method for evaluation function in cerebral palsy. Detroit Orthopedic Clinic.

Deals with four charts that are integrated by a common coding system. These codes compare the developmental level of the handicapped with normal levels to age five. It contains one section for hand facility, with chart and grading instruction for same. Material is also available for balance and locomotion.

Andrews, G. Creative rhythmic movement for children. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1954.

This book is predicated on the theory that children are different and that they all possess varying degrees of creativity. Since movement is a natural and vital means of expression, the book uses movement education, exploration, and development as means for developing better ways of understanding and working with children. The methods discussed have proved to be quite effective with retarded children on all levels.

Blanton, E. Development according to mental age. Richmond, Va.: Richmond Consultation and Evaluation Clinic.

Motor characteristics of children and appropriate age levels are discussed. Helpful for the teacher planning a program.

Bonnett, E. E. & Pastovic, J. J. Instruction for the profoundly mentally retarded. Ebensburg, Pa.: Appalachia Intermediate Unit 08.

This manual gives samples of: pupil summaries; preparation for instruction in the home; classroom programs; classroom for the profoundly retarded; checklists of competencies; a list of daily objectives, monthly objectives; procedures; and reports.

Bradley, W. T., Konicki, G., & Leedy, C. Daily sensorimotor training activities. New York: Educational Activities, Inc. 1968.

The book presents sensorimotor activities for preschool children that can be integrated with the curriculum and equipment in a preschool center. The book is set up in weekly plans covering body image, space and direction, balance, basic body movement, hearing discrimination, symmetrical activities, eye-hand coordination, eye-foot coordination, form perception, rhythm, large muscle, fine muscle and games.

Bucks County Public Schools. Bucks county intermediate unit program for the severely and profoundly handicapped. Doylestown, Pa.: Intermediate Unit 22.

This program gives the area of motor development and some skills to be developed. It contains an evaluation checklist that will show even a minor change.

Carlson, B. W., & Ginglend, D. R. Play activities for the retarded child. Nashville, Tenn.: Abingdon Press, 1961.

A guide for parents and teachers, the experienced or the inexperienced in conducting play and recreational activities for the retarded. Sections include specific play activities in these categories: games, crafts, musical activities, and informal and imaginative play. The needs and special problems of the retarded are discussed. Activities are classified on the basis of these developmental areas: mental health, social, physical, language, and intellectual.

Clarke, J. J. & Haar, F. B. Health and physical education for the elementary school classroom teacher. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964.

A standard elementary school physical education textbook. Chapters deal with specific activites in these areas: exercises, stunts, and apparatus; games and sports; rhythms and singing dances; and folk dances. Activities are classified into three categories according to developmental level of the child. Excellent chapters also deal with the need for physical education, the objectives of the program, child growth, and individual differences in the attainment of motor skills.

Cratty, B. J. Developmental sequences of perceptual-motor tasks. Freeport, Long Island, New York: Educational Activities Inc., 1967.

This publication presents appropriate movement activities for neurologically handicapped and mentally retarded children and youth. The emphasis is upon physical education not only as a means

of facilitating motor skills and physical fitness, but also as a way of enhancing the learning process for children with intellectual deficits or learning disorders. This publication was initially written for experimental use in response to specific requests by special educators for a guide that could be employed by teachers of educationally handicapped and mentally retarded children. It is a highly useful reference for all interested in providing meaningful motor experiences for the retarded.

Cureton, T. K. Physical fitness and dynamic health. New York, N.Y.: Dial Press, 1965.

In addition to the "why" of physical fitness, the author presents a series of simple tests by which fitness can be measured and outlines in carefully illustrated detail a program for getting into top-notch condition. A system of exercises for developing particular parts of the body is included.

Davis, P. A. Teaching physical education to mentally retarded. Minnesota: T. S. Denison and Company Inc., 1968.

Methods for teaching physical education to all types of the mentally retarded are presented. Also, general objectives are listed for the physical education program and movement program.

Diem, L. Who can? Dowers Grove, Ill.: George Williams College, 1962.

This book illustrates and outlines programs and procedures for the development of ball skills and basic body movements, based on the author's physical education work in Cologne, Germany.

Fait, H. Special physical education: adapted, corrective, developmental. Philadelphia: W. B. Saunders Co., 1966.

This is the revised and enlarged edition of the author's original Adapted Physical Education. Chapters deal with the organization, administration, supervision, and teaching of adapted, corrective, and developmental physical education in different environmental settings to individuals with a viriety of impairments. Special consideration is also given to the problems of the mentally retarded. In addition to a chapter discussing some of the theoretical and practical considerations of programming for the mentally retarded, a special section deals with physical fitness testing of the retarded. The tests and procedures offered are based on the author's personal study and investigation at Mansfield State Training School and Hospital in Connecticut.

Finnie, R. Handling the young cerebral palsied child at home. New York: E. P. Dutton & Co. Inc.

Written primarily for parents of cerebral palsied children, the text discusses and illustrates methods for handling the child in daily activities. Introduced with a questionaire concerning developmental stages and activity levels, the manual describes the most common difficulties of the spastic, athetoid, ataxic, or flaccid child. Drawings and explanations included concern, general advice, the development of movement, carrying, bathing, toilet training, dressing feeding, transporting devices, sleeping, play, and linking play with everyday activites. Also provided are lists of additional readings, terminology, and suppliers of accessories and equipment.

Geseil, A. & Amatruda, S. Developmental diagnosis: normal and abnormal child development. New York: Harper and Row.

The second edition of the text examines normal, atypical, and abnormal experssions of early child development, consistently emphasizing the central problem of diagnosis and diagnostic methods. Part one, providing an overview of early child development, outlines basic principles and methods. The nature of behavior and mental growth is discussed. A detailed chapter on the norms of development integrates the developmental tests, behavior characteristics, and growth trends of the behavior patterns for the first four years of life. Part two, concerned with defects and deviations in development in relation to normal criteria, covers amentia and retardation, endocrine disorders, congnitive disorders, neurological diagnosis of infant behavior, cerebral injury, blindness, deafness, prematurity, environmental retardation, and the clinical aspects. Effects of these conditions on performance, trends of development, and personality organization are considered. These chapters on developmental defects and deviations are particularly directed to the medical practitioner. Part three deals with methods of early child development through private medical practice and public health measures. A chapter on developmental pediatrics discusses this form of clinical medicine concerned with the diagnosis and supervision of child development, with implications for the social aspects of medicine. Lengthy appendixes contain information on various developmental test procedures, a comprehensive growth trend chart intended as a very detailed guide for case interpretation, and discussions of examination equipment, cinematic case studies, literature on developmental guidance, and professional training for developmental pediatrics.

Godfrey, G. & Thompson, M. Movement pattern checklist. Columbia, Missouri: Kelly Press Inc., 1966.

These checklists have been devised for evaluating a number of basic movement patterns and can be used as they are or adapted to the needs of particular situations. Included are a Movement Profile Sheet for summarizing the information from the checklists and a movement Pattern Checklist for evaluating general elements and

deviations of all patterns on a single sheet. Evaluations based on "pattern elements present" and"deviations noted" should be of help to all involved with or interested in determining an individual's movement pattern characteristics and problems.

Groden, G. Relationships between intelligence and simple and complex motor proficiency. American Journal of Mental Deficiency, 1969.

Substantial relationships were found between intellectual and motor proficiency in tests administered to 54 outpatient children of a mental retardation facility. Furthermore, it was found that a sizable relationship between scores on the intellectual and comples motor proficiency tests remained after possible influences of purely motor disabilities as reflected by relatively simple motor tests were controlled.

Humphrey, J. Child learning through elementary physical education. Dubuque Iowa: Wm. C. Brown, 1965.

This book deals with physical education as a specific subject within the school curriculum that makes significant and unique contributions to the total growth and development of the child and aids in the fulfillment of the aims and objectives of education in general. It also deals with the potential of physical education to serve as the core around which learning experiences in reading mathematics, science, and social studies can be developed. This is not an activites book, but one that attempts to provide an understanding of the impact of physical education as a potential tool in the education of the elementary school child. As such, it can be used as a resource book for the teacher of the mentally retarded in developing a rationale for the place of physical education in the curriculum of the retarded.

Hurlock, E. B. Child development. New York: McGraw-Hill Company.

The text on child development begins with explanation of some traditional beliefs (old wives' tales) about children that can be psychologically damaging, explanation of methods used and difficulties encountered in the scientific study of children. General principles relating to rate, predictability, stages, and other characteristics of development are stated. Discussion of foundations of developmental pattern covers heredity and prenatal development. Possible effects of birth on development are identified. Following major sections focus on physical, motor, speech, emotional, and social development.

Hutt, M. L. & Gibby, R. G. The mentally retarded child. Boston: Allyn & Bacon Inc., 1965.

It points out three basic aspects of perceptual-motoric training. Gives some skills to be taught.

Jordan, T. Development and disability at age four: a prospective longitudinal study. (BEH, Dept. HEW). Washington, D.C.: U. S. Government Printing Office.

The report was explained to be one in a series of products designed to provide an inferential base for planning instructional strategies. Considered were biological and socially adverse states around birth and measures of attainment in three domains at the end of the preschool years. Early child development was first reviewed. The preschoolers examined were the 1965 cohort of 1003 infants who were 50% biological risk and 50% nonrisk. Criteria for selection of experimental subjects were disorders of pregnancy and gestation, delivery, neonatal effects, and any combination of these. It was hypothesized that the four categories of early developmental risk and social class were significant influences on child growth as measured in physical, motor, and cognitive domains at four ages of thirtysix, fortyeight, and fiftyfour months. The statistical model employed was multiple linear regression. Regressive models of development were compared. Predictors and criteria for each of the four ages were reported. The models were found to vary considerable in their capacity to account for criterion variance. Results showed that at thirtysix months, consideration of the three domains of development indicated that cognitive attainment was most predictable, and that at the later ages, social class was usually more influential than biological risks on cognitive attainment.

State Department of Mental Health, Division of Mental Retardation Services. Day camping for the severely mentally retarded. Illinois: Kock, A. S., 1970.

Explains guidelines for establishing day camping programs and physical activities for the severely retarded.

Kephart, N. C. The slow learner in the classroom. Columbus, Ohio: Charles H. Merrill Books Inc., 1960.

Two chapters, Motor bases of achievement and Sensory motor training, are particularly good. The former deals with the muscular basis of behavior, posture, laterality, directionality, and body image. The latter deals with specific activities (walking board, balance board, trampoline, stunts, games, and rhythms). There is a good section on testing the sensory-motor ability of the youngster.

Kirchner, G. Physical education for the elementary school child. Dubuque, Iowa: Wm. C. Brown, 1966.

This is designed as a basic reference for those concerned with elementary school physical education. The profuse illustrations and accompanying explanatory materials make it a most valuable

resource for the classroom teacher and physical education specialist alike. Activities and presentations are based on the growth and development patterns of children, interests of youngsters, and the field experiences of a number of successful teachers. Activities are divided according to primary and intermediate levels and categorized as rhythms, self-testing activities, games, and physical fitness evaluation. Teachers of the mentally retarded will find this a most interesting, stimulating, and valuable book.

Letchaw, M. & Egstrom, G. Human movement. Englewook Cliffs, N.J.: Prentice Hall Inc., 1969.

The book contributes to the understanding of concept formation in the areas of human movement and biological development by giving formation that the child may acquire through participation in movement activites. The book included such things as: movement, mechanics of movement, strength endurance, posture, running activities, and throwing activities.

Lie, T., Pomeroy, J., Bowers, L., Meisgerier, C., Crotty, B., & Hillman, W. A., Jr. Programming for the mentally retarded. Washington D.C.: AAHPER Publications, 1968.

The book is concerned with paper and presentations on physical education and recreation for the retarded. It presents an approach to programming play facilities and equipment. It also has a program for developmental motor activities.

Lowendahl, E. Exercises for the mentally retarded: How to develop physical functions in the growing child. Swarthmore, Penn.: A.C. Croft,Inc.

A guide to motor growth and development in the mentally retarded child. Summarizes basic principles in interpreting physical levels and teaching methods. For age level from three to sixteen years, an outline presents stages of skeletal and nerve muscle growth, objectives, suggested exercises, and physical activities.

Mafex Associates, Inc. Manual or perceptual-motor-activities: A guide for elementary physical education and classroom teachers. Johnstown, Penn., Author.

The manual is designed to provide classroom teachers and physical educators with information on new techniques in perceptual motor training. The need for physical education, the purpose of the manual, the philosophical background, a glossary of definitions, and a hypothetical case are presented as introductory matter. Diagnostic tools are discussed and listed, programming techniques are illustrated, and possible activities outlined. Methods of relating physical activities to classroom activities are reviewed,

and games are described. Obstacle courses are suggested for equipment utilization. Each section includes diagrams and step-by-step instructions for practical application.

Morgan, C. W., Meyer, M. W., Stein, J. U., Anderson, J. M., Barke, F. G., Myers, A. P., Milo, E., Geer, W., & Weiner, B. B. Recreation and physical activity for the mentally retarded. Washington, D. C.: AAHPER, 1966.

The book describes who the mentally retarded and the results of instructional play activities. Play objectives and desired outcomes are also noted.

Morgan, R. E., & Adamson, G. T. Circuit training. London, England: G. Bell and Sons, Ltd., 1959.

The first complete and authentic account of circuit training ever published. The principles and methods of circuit training, descriptions and photographic illustrations of recommended exercises, and observations on exercise selection and classification, supported by the detailed analysis of individual exercises, make up the major part of this book. This program has been successfully used with the retarded.

Morgan, J. B. Developmental psychology. Jamaica, New York: St. John's University Press.

Although cognizance is taken of the age-level approach to developmental psychology by distributing studies, where available and applicable, among different age groups, the basic framework of the text is the vertical dimensions of growth. Following a discussion of various theories of developmental psychology and the methods, tools, and subjects of this discipline, major units cover the following aspects of growth: physical (the newborn), development and learning (heredity, environment, readiness, learning studies), motor (locomotion, hand and arm movements, social interrelationships), emotional (theories, physiological induces, socially disintegrative and positive-integrative emotions), intellectual (perception, concepts, intelligence), language (communication, vocabulary, content, reading), social (origin, trends, sociometry, sex role, personal values), and personality adjustment and development (tests, consistency, personality disorders). Included are an extensive bibliography and a list of suggested readings.

Pennsylvania Department of Education. Challenge to change. Harrisburg, Penna.: Author, 1970.

This book tells about program guidelines in physical education for the severely retarded. Programs, charts, and checklists are given.

Pennsylvania Department of Education. Compete. Harrisburg, Penna.: Author, 1972.

Broken down in modules, a list of objectives and possible methods and materials to be used by the teacher.

Perry, N. Teaching the mentally retarded child. New York, N. Y.: Columbia University Press, 1960.

This contains background and research materials. One chapter deals with physical activities classified according to beginner, intermediate, and advanced.

National Council on Physical Education. Physical education file. South Orange, N. J.: Author, 1964, 3 vols.

This three-volume file is designed so that program activities can easily and quickly be effected through a series of sequential, progressive, and correlated lesson guides. A teacher's manual is a part of each file, giving additional information about the activities and many valuable teaching hints and suggestions. Activities are classified according to the following categories: marching and tactics, basic coordination, calisthenics, sports skills, games, relays, story plays, rhythms, mimetics, stunts, and testing. The sequential nature of this presentation makes it applicable to the mentally retarded.

Roberts, J., Murray, R., & Baldwin, N. A program for the profoundly retarded at an institution in Bucks County. Doylestown, Penna.: Intermediate Unit 22.

The program allows for an individualized motor development program. They see the child three or four times a week. With the help of physical therapist, teacher, and aide, the specific motor-oriented behavioral objectives are planned.

Robins, F., & Robins, J. Educational rhythmics for mentally handicapped children. New York, N. Y.: Horizon Press, 1965.

This book presents the approach of a group in Switzerland in using fundamental rhythms with the retarded. The book is well-illustrated, and explanations of the various movements are well-described. Activities, moving from the simple to the more difficult, are of the type known as movement exploration in this country. There is a recent supplement to this edition of the publication.

Rur, R. E. Suggestion from the field: Standing platforms for nonambulatory patients. Physical Therapy, 1971, 51(9), 1015-1016.

Teaching ambulation to nonambulatory children by using standing platforms is discussed. Research cited indicates that delay in

motor skill development interferes with potential growth: psychological development, intelligent behavior, emotional expression and control, language and thought. Because nonambulatory children are unable to bear weight and balance in the upright position by themselves, a method of teaching them ambulation is through the use of individual or group standing platforms. The standing platform can be used with or without gutter splints to maintain stability of the lower extremities while allowing freedom of movement of the head, neck, trunk, and upper extremities. The platform's design and function provide children with the security and opportunity to develop strength, endurance, balance, and coordination, to stretch undesirable contractures, to perceive different sensations, and to engage in interpersonal interactions. Pictures and construction details for group platforms are included.

Schlotter, B., & Svendsen, M. An experiment in recreation with the mentally retarded. Springfield, Ill.: State Department of Public Welfare, 1951.

This describes an experiment in recreation programming at the Lincoln State School and Colony. Detailed analysis and discussion are given to organization of the program, participants' response to activities, play equipment, and facilities used. Activities are indexed in five ways: alphabetical, complexity, motor activity, equipment, and social interaction. Much emphasis is placed on the importance of care in selecting activities for the recreation program for the retarded.

Sisters of St. Francis of Assisi. Physical education curriculum for the mentally handicapped. Milwaukee, Wisc.: Cardinal Stritch College, 1962.

This guide, based upon the experience gained in teaching the mentally retarded by the Sisters of St. Francis of Assisi in the St. Coletta Schools, presents a sequential curriculum specifically designed for these children. Games and exercises requiring high level organization and complex response are omitted or presented in modified form. Rhythmic response activities, group games, physical fitness exercises, relays, and self-testing activities are grouped into five functional levels (MA 3.0 to 12.0) with detailed descriptions, procedures, and teaching suggestions for each. Review of activities from preceding levels is emphasized. Lists of usable books, filmstrips, and records are appended. This book is highly recommended as a resource for those involved in physical education or recreation programs for the mentally retarded.

Smith, D. K. M-A-P project skill development checklist. Indians Armstrong Counties: Area Intermediate Unit 28, 1973.

Lists include various motor skills and five possible development levels. Directions are to mark category that describes child's current level of behavior and write any specific behaviors of interest.

Tanner, J. N., & Inhelder, B. Discussions on child development. (Vol. 1), New York: International Universities Press, Inc.

The compilation of discussions includes the following areas: the physical and physiological aspects of child development, the behavior of new-born anencephalics, criteria of the stages of mental development, and comparative behaviorology. Also described are the electroencephalographic development of children, stages of psychological development, psychoanalytic instinct theory, and the cross-cultural approach to child development problems. Those involved in the discussions were John Bawlby, Frank Fremont-Smith, G. R. Hargreaves, Barbel Inhelder, Konrad Z. Lorenz, Margaret Mead, K. A. Melin, Marcel Monnier, Jean Piaget, A. Redmond, R. R. Struthers, J. M. Tanner, W. Grey Walter, Rene Zazzo, J. C. Carothers, E. E. Krapf, and Charles Odier. The text represents the notes from the first of several annual meetings. Additional records of the discussions may be found in ED 005 920, 21, and 22.

Valett, R. E. The remediation of learning disabilities: A handbook of psychoeducational resource programs. Palo Alto, Ca.: Fearon Publishers.

The handbook presents a series of concrete activities and exercises for children with learning disabilities. Fifty-three basic learning abilities or resource programs are grouped under six major areas -- gross motor development, sensory motor integration, perceptual motor skills, language development, conceptual skills, and social skills. Each ability is defined operationally, illustrated, and provided with an educational rationale. Also, each activity is considered as a developmental task, and beginning, middle, and advanced level program ideas are suggested. A sample program worksheet, reference to related programs, suggestions for instructional materials and relevant educational and diagnostic aides, and supplementary readings are provided for all 53 programs. Forms for pupil evaluation and pupil progress reports are included. The book, presented in loose leaf format, is intended for modification and extension by its users.

Wickstram, R. L. Fundamental motor patterns. Philadelphia, Penna.: Lea and Febiger.

Introduced by a discussion of movement terminology, motor developmental patterns, sport skill patterns, literature related to motor skills, and a study of movement and mechanics, the text describes in detail six major motor skills. The use of many drawings based on films of actual movements illustrates each skill pattern. Performance, the development of form, the mature pattern, the mechanical principles involved, the use or adaptations of the basic patterns in sports, and an analysis of form are discussed for each of the following skills: running, jumping, throwing, catching, kicking, and striking.

Wilkes-Barro Area Schools. Program for severely retarded. Wilkes-Barro, Penna.: Wilkes-Barro Public School District.

This program is broken down into modules dealing with on non-locomotive movement, locomotive skills, balance activities, and hand-eye manipulative skills.

Winnuls, J. P., & Landers, D. M. Trampolining with handicapped children. Teaching Exceptional Children, 1971, 181-188.

The use of the trampoline as a tool of fine motor diagnosis, remediation, and development with low performing handicapped children is discussed, explainations include the trampoline's use for physical movement, balance, physiomotor; and, techniques in teaching trampolining. The use of the trampoline as a reinforcer is also discussed.

III. SENSORY & MOTOR DEVELOPMENT

Alpern, G. Effect of selected combinations of stimuli on communicative responses of children with Down's syndrome. Dissertation Abstracts International, 1972, 3, (1), 4922-23.

This study was designed to measure effects of stimuli combinations. Independent variables included auditory-visual stimuli, auditory-gestural stimuli, visual-gestural stimuli, sensory-motor stimuli, and no stimuli. Conclusions indicated that response frequency increased when DS children were presented paired combinations of stimuli.

Auxter, D. Motor skill development in the profoundly retarded. Training School Bulletin, May 1971, 5-9.

The article discusses implementation and effects of a gross motor program that was designed to increase motor skills among profoundly retarded individuals.

Burt, M. M. Perceptual deficients in hemipelgia. American Journal of Nursing, May 1970, 1026-1029.

Constructive comments are given regarding hemipelgia patients in a sensory development environment.

Chandler, L. S., & Adams, M. A. Multiply handicapped children motivated for ambulation through behavior modification. Physical Therapy, 1972, 52, (3).

A multiply handicapped severely mentally retarded eight-year-old boy with special health problems became an independent walker following a 28-day motor program using behavior modification.

Cooksley, Oscille, Haftin. Teaching manual for sensory stimulation. Austin, Texas: Austin State School.

A teaching manual for sensory stimulation-instruction for the bedfast multiply handicapped retardate.

Fiorentine, M. R. Normal and abnormal development: The influence on motor development. Springfield, Ill.: Charles C Thomas, 1972.

The normal and the abnormal aspects of motor development with recommendations concerning sensory-motor experiences for cerebral palsied children.

Fletcher, H. L. Getting results from movement exploration. Academic Therapy Quarterly, Fall 1972, 27-32.

A description of movement exploration: benefits and techniques.

Fredericks, B. H. The teaching research motor-development scale for moderately and severely retarded children. Springfield, Ill.: Charles C Thomas, 1972.

Motor proficiency areas that can be tested in a classroom include: standing; crouching; walking forward on mats; touching nose and fingertips; and, closing and opening hands. Equipment, number of trials, directions, and scoring are specific.

Frostig, M. Visual perception, integrative functions and academic learning. Journal of Learning Disabilities, January 1972, 5, 15.

Specific exercises are given to enhance the child's development in sensory motor functions.

Hedrich, V. Apply technology to special education. American Education, 1972, 8 (4).

The Seattle Public Schools Special Education program, funded by Title VI, includes early sensory motor training to facilitate learning and the involvement of parents learning about their child's special educational needs.

Kershner, J. R. A comparison of the Doman-Delacato method and a behavior modification methods upon the coordination of mongoloids. Dissertation Abstracts International, Vol. 30, No. 4-a, 1430-1431.

Conclusions of the study: (1) the Doman-Delacato method fails to yield superior improvement when contrasted to the behavior modification procedures or to the non-treated groups; and, (2) motor coordination of severely mentally retarded children can be improved by application of behavior modification principles in teaching selected motor skill tasks.

Kistyokovskaya, M. Development of movement in children in the first year of life. Pedogogika. Moscow: U.S.S.R., 1970.

Results of the development of movement in normal and developmentally retarded children are presented.

Maloney, M. P., & Ball, T. S. Analysis of generalizability of sensory-motor training. American Journal of Mental Deficiency, January 1970, 458-469.

A study which investigates generalization in Kephart's sensory-motor training system concluded that sensory motor training generalizes to body image.

Maloney, M. P., & Payne, L. E. Note on the stability of changes in body image due to sensory-motor training. American Journal of Mental Deficiency, March 1970, 708.

This article presents a study which indicates that sensory-motor training affects body image concepts.

Potheir, P., & Delmont, M. Two different remedial motor training programs and the development of the mentally retarded preschools. American Journal of Mental Deficiency, 1972, 77, 8.

This study demonstrates the advantages of using a detailed developmental analysis of sensory-motor deficits as a basis for the selection of remedial sensori-motor activities.

Rodriguez, E., & Sproles, P. The use of a listening center for severely retarded children. Education and Training of the Mentally Retarded, 1967, 2 (3), 140-141.

The use of the listening center in order to develop independence and other skills with the severely retarded child.

Smeets, P. M. The effects of various sounds and noise levels on stereotyped rocking of blind retardates. Training School Bulletin, 1972, 68, 4, 221-226.

This study investigates the effects of auditory stimuli with institutional retardates. An increase in body rocking is noted with the increased noise level and a decrease when the level was 30 to 60 decibels.

Soklmann, H. The child suffering from cerebral palsy. In C. Pretzner (Ed.), Aspects of curative education. Aberdeen, Scotland: Aberdeen University Press, 1966.

Concerned with methods of training severely involved children with sensory motor experiences as basis for all learning. Gives background information on the condition of a cerebral palsied child.

Stephens, B., Baumgartner, B., Smeets, P. M., & Wolfinger, W. Promoting motor development in young retarded children. In Education and training of the mentally retarded, 1970.

Individual perceptual motor programs were planned for custodial and trainable children. The results indicated success in motor skills.

Stewart, F. J. A woral-notes program for teaching non-verbal children. Education and Training of the Mentally Retarded, December 1972.

The method was used with four severe mental retardates. No verbal clues were given, training procedures were based on motor stimuli and any echoic motor or vocal response was reinforced. Results indicated that vocal behavior increases for subjects reinforced during a sensory-motor task.

Sullivan, J. P., & Batareh, G. J. Educational therapy with the severely retarded. Training School Bulletin, May 1973, 5-9.

Reviews educational training methods used for thirty severely retarded children. Includes fine and gross motor development, visual and auditory perceptional skills.

Voss, D. G. Physical education curriculum for the mentally handicapped. Wisconsin: Wisconsin Department of Public Instruction, 1971.

Physical education curriculum for all levels of mentally handicapped is discussed. Activities are presented with a brief narrative, types where applicable, teaching suggestions, and activities for the various levels of students.

Webb, R. Sensory motor training of the profoundly retarded. American Journal of Mental Deficiency, 1969, 283-294.

Analyzes training techniques to develop motor reactions to sensory stimulation based on the AMMP theory. The theory includes awareness, movement, manipulation of environment, and posture and locomotion.

Write, C. J. Motoric engramming for sensory deprivation or disability. Exceptional Children, 1972, 38, 4.

The relationships of motoric involvement, perceptional motor theories, and neurophysiological evidence are examined for support of a motoric engramming approach to learning. Particularly noted is the necessity for motoric involvement of the sensory disabled mentally retarded child. The approach advocated is one of adaptation to existing limitations through kinesthetic sensory motor training or motoric engramming.

Whitman, T. L. Effects of reinforcement and guidance procedures on instruction following behavior of severely retarded children. Journal of Applied Behavior Analysis, 1971, Winter, 8.

Positive reinforcement, physical guidance, and fading procedures were used to teach two severely retarded children motor responses to a variety of verbal instructions.

IV. PHYSICAL THERAPY C.P. CHILD

Berke, M. J. Communication training in childhood brain damage. Springfield, Ill.: Charles C Thomas Inc., 1969.

The book speaks of brain-damaged children in general, however it focuses greatly on cerebral palsy. It first speaks of nature and scope of the problem. It then goes into great detail about the many other disorders and developmental problems facing the child. It covers theories, therapy methods, and special education for the cerebral palsied child. The book is a compilation of information taken from professional reports, conventions, journals, and abstracts integrated for practical use in therapy and education for the cerebral palsied child.

Blencowe, S. M. Cerebral palsy and the young child. London: E & S Livingston, LTD., 1968.

A concise document on Cerebral Palsy. It is very well written by British authorities in the field. The book consists of early understood explanations of the most complex theories concerning the care of cerebral palsy children. All that is known about this neurological disability and approaches of treatment were discussed.

Bobath, B. Abnormal postural reflex activity caused by braing lesions. Wm. Heinemann Medical Books, 1971.

This book is an analysis of various types of cerebral palsy, resulting abnormal motor patterns and disabilities, and treatment possibilities and their problems. It basically consists of background information, theory, and ways of testing patients for the presence or absence of postural reflexes to assess the severity of the individual case for planning of treatment and inassessing improvements.

Carter, J. H. Educational environment for the orthopedically handicapped including the cerebral palsied. Sacremento, Calif.: California State Dept. of Education, 1962.

Planned as a guide for planners and administrators, the report considers architectural problems in the design of educational facilities for orthopedically handicapped and cerebral palsied children. Factors influencing the learning process and the selection of instructional materials are discussed and daily programs suggesting subject areas, activites, physical therapy equipment, are provided.

Cratty, B. J. Perceptual-motor behavior and educational processes Springfiled, Ill: Charles C Thomas, 1969.

Addressed to special class teachers, the text presents research based information on perceptual-motor behavior and education, including movement and movement activities. Special education is considered and perceptual motor abilities are discussed with reference to the blind, the clumsy child with minimal neurological

handicaps, and the cerebral palsied. A screening test for evaluating perceptual motor attributes of neurologically and physically handicapped children as well as a mobility orientation test for the blind are provided.

Cricksmay, M. Speech therapy and the Bobath approach to cerebral palsy. Springfield, Ill., Charles C Thomas, 1972.

This book discusses neurophysiological principles underlying the Bobath approach and how they can be applied in each of the three areas of therapy - physical, occupational, and speech. Emphasis is placed on the need to integrate the treatments of these therapists.

Criswold, P. A. Play together: Parents and babies. Indianapolis: United Cerebral Palsy of Central Indiana, 1972.

This is a review of a program which had been tried and tested with thirty-eight children and parents. The participants met twice weekly at the Cerebral Palsy clinic during the program period. Each activity is illustrated with objectives, motivating activity, and the necessary equipment and arranged in a chart form. It basically illustrates how a parent can play with his child and still contribute to the child's overall progress.

Denjoff, E. Cerebral palsy - the preschool years. Springfield, Ill.: Charles C Thomas, 1967.

A comprehensive, well-documented approach to diagnosis, treatment, and methods of planning a course of treatment with parents of the cerebral palsied child. The discussion is clearly outlined and based on objective data from clinical research. A valuable reference for professionals involved with cerebral palsy and related disorders.

Finnie, N. Handling the young cerebral palsied child at home. New York, N. Y.: E. P. Dutton & Co. Inc., 1964.

This book is an easily understood guide, using simple terms and with 165 illustrations describing some practical and workable techniques in handling the young cerebral palsied child. The author discusses cerebral palsy in general, what it is, and how developmental sequences of the child are affected. Movement development is contrasted in the normal and cerebral palsied child and means of rectifying the abnormal is given. Everyday self-help skills are discussed and the author bridges play with everyday activities. There is a chapter on terminology, equipment suppliers, accessories, and an overall indesposible and useful guide for anyone who works with the cerebral palsied child.

Fiorentino, M. Reflex testing methods for evaluating central nervous system development. Springfield, Ill.: Charles C Thomas, 1963.

This manual provides an understanding of sequential development of normal and abnormal reflex maturation. It contains charts of motor development, reflex testing, photographs, clear explanations, and a means of evaluating and recording responses. It serves as a valuable reference for anyone working with the cerebral palsy child.

Fiorentino, M. Normal and abnormal development: the influence of primative reflexes on motor development. Springfield, Ill.: Charles C Thomas, 1972.

A guide in evaluation of the newest techniques in therapy. The development of a normal child is contrasted to that of abnormal development in a cerebral palsied child. Certain reflexes are considered and their effect on the child with cerebral palsy is emphasized.

Gillette, H. E. Systems of therapy on cerebral palsy. Springfield, Ill.: Charles C Thomas, 1969.

The author's intent is to help clarify the many therapeutic techniques offered for management of motor aspects of cerebral palsy. The book is divided into two sections: the first discusses the components of motion, stimulus, tone, etc.; and continues into motion development. The second half deals with specific systems of therapy wuch as Bobath, Phelp, Deaver, and Crothers. The book is very concise and naturally limits the detail of each system but it would however be worthy for anyone treating cerebral palsied victims.

Helt, K. S. Muscle function, locomotion, and hand function. Vol. I, Assessment of cerebral palsy. Baltimore: The Williams and Wilkins Co., 1969.

This volume deals with the assessment of physical aspects of cerebral palsy. Concise discussion of muscle tone, spasticity, and abnormal movements is given. The second section deals with locomotion, posture, and gait and would interest physical therapists. Valuable reading for any therapist or teacher dealing with children with neurological impairments is contained within this volume.

Keats, S. Cerebral palsy. Springfield, Ill.: Charles C Thomas, 1969.

This book contains general, up-to-date information on the subject of cerebral palsy. Comprehensive treatment methods are presented in detail. It is a well written and easily understood text.

Kvaraceus, W. C. & Hayes, E. N. If your child is handicapped. Boston, Porter Sargent, 1969.

Intended for parents of handicapped children and the specialists who work with them, this collection includes highly personal

accounts of the experience of having a handicapped child. Included are eleven accounts by parents of the cerebral palsied and orthopedically handicapped, eight by parents of the mentally retarded, nine by parents of the deaf, six by parents of the emotionally disturbed, and seven by parents of children with special health problems.

Marx, M. Integrating physical therapy into a cerebral palsy early education program. Physical Therapy, 1973, 53.

The article refers to a program started at United Cerebral Palsy of Manhatten that integrates therapy and early education. The program is geared toward three to six year old children, most of them having a diagnosis of cerebral palsy in all degrees of severity. The children are grouped according to age and intelligence. Besides the physical therapy, the program includes a psychiatrist, psychologist, social worker, occupational therapist, speech therapist and two teachers. However, the article narrows on the physical therapist and her role in the program. Programs under the physical therapist include positioning and stimulating, movement, self-care, and perceptual training.

McDonald, E. & Chance, B. Cerebral palsy. New Jersey: Prentice-Hall, Inc., 1964.

The diagnosis and classification of each of the types of cerebral palsy are discussed and specific therapies outlined. The authors outlined a thirteen point program for planning and action - prevention, case finding, diagnosis and evaluation, treatment, education, employment, recreation, research, residential care, finicial aid, personnel training and funding. Development of language and speech in the young child is discussed and guides for providing a basis for diagnosising and treating language and speech problems in the older child are given.

Mysak, E. Neuroevolutional approach to cerebral palsy and speech. New York: Teachers College Press, 1968.

The author presents the basis, methods and results of this new approach to therapy. Cerebral palsy is discussed as a reflection of disturbed neuroontogenesis and traces human neuroevolution from the supine to the biped stage. Three types of neurotherapy programs are outlined and suggestions are given to the teacher and occupational therapist. A concise discussion of the basis and principles of neurospeech therapy for the cerebral palsy follows.

Pearson, P. & Williams, C. Physical therapy services in the developmental disabilities. Springfield, Ill.: Charles C Thomas, 1972.

This book discusses the strengths and weaknesses of many of the tests used by physical and occupational therapists and presents many new and practical ideas for treatment of handicapped child. Basic information on neuromotor problems is provided.

Perlmutter, S. Neuroanatomy and neurophysiology underlying current treatment techniques for sensorimotor dysfunction. Chicago: University of Ill. Hospital, 1971.

This is a revised and expanded edition of material used to supplement lectures presented at workshops directed by the author on treatment of the multiple handicapped child. The contents include material on normal growth and development sequences and outlines of the basic philosophies of three approaches - Bobath, Fay/Doman-Delacato and Rood. The manual is divided into five sections and could be used as an excellent teaching supplement.

Pothier, P. Therapeutic handling of the severely handicapped. American Journal of Nursing, 1971, 71, 321-324.

This article is concerned mainly with the training nurses should have in caring for the severely handicapped child. A few case studies are discussed and methods described. It is interesting reading for anyone who may have contact with this child.

Rusk, H. A. Specialized placement of quadriplegics and other severely disabled: Final report. New York: New York Institute for Physical Medicine, 1963.

To help quadriplegics and other severely disabled achieve vocational placement and confront the catastrophic impact of quadriplegia on bodily function (as detailed in the report), a rehabilitation team provided medical, various special, and vocational rehabilitation services. The 100 clients (59% men, 79% less than 45 years of age and 62% between 20 and 39 years of age) were evaluated for physical capacities and job-task performance.

Wilson, M. Crippled and neurologically impaired. Exceptional children in schools. Holt, Rinehart and Winston, Inc., 1963.

Wilson speaks of children with neurological and physical impairments, types and causes and possible secondary handicaps that become involved in the various types of cerebral palsy. Classification, administrative provisions and the separate educational programs provided for these children are also discussed.

Wolf, J. M. The results of treatment on cerebral palsy. Springfield, Ill.: Charles C Thomas, 1969.

This book is a compilation of literature related to results of physical therapy for the cerebral palsied. The volume is divided into four sections concerning: historical perspective, measuring instruments, principles on evaluation, assessment of CNS disorders, results of therapy and foundations for future studies of assessment.

FILM

Jones, Margaret, M.D., Pre-Speech Evaluation and Therapy, Dept. of Pediatrics, School of Medicine University of Calif. at Los Angeles, Rehabilitation Center, 1967.

This black and white film runs with sound for 25 minutes. it illustrates the techniques of pre-speech evaluation and training of Helen A. Muller, a speech therapist in Zurich, Switzerland. It is divided into two parts - evaluation and treatment. Evaluation techniques are preformed on a normal three year old and on a cerebral palsied child. Persisting reflexes are shown. This film serves as an introduction to the suggested methods.

V. NEURO-DEVELOPMENTAL METHOD (BOBATH METHOD)

Bobath, B. Key points of control. The Western Cerebral Centre: London, England. England, 1962, 1-4.

This paper deals with the points of the body from which to reduce spasticity and simultaneously initiate normal postural and movement reactions. The points of control include head, arms, legs, and pelvis.

Bobath, B. Important points in treatment by reflex inhibition and movement facilitation. The Western Cerebral Centre: London, England. England, 1963, 1-2.

This article gives a brief resume of the importance of preparing a child for movements. Supression (inhibition) of abnormal patterns of posture and movement must be dealt with before normal development can occur. Movements have to be developed as they occur in the development of a normal child. The child is always treated as a whole -- no parts of the body are treated in isolation.

Bobath, B. Treatment principles and planning in cerebral palsy. Physiotherapy, 1963, 41, 8, 923-26.

This article discusses the main purpose and aim of physiotherapy, which is to give the cerebral palsy child control over his abnormal motor patterns and to provide him with a variety of more normal movement patterns.

Bobath, B. Basic principles of treatment. The Western Cerebral Centre: London, England. England, 1964, 1-2.

This article discusses the basic principles involved in treating the cerebral palsy child, a child whose central nervous system has not developed to his chronological age. Main problems of concern and possible areas of treatment are also discussed.

Bobath, B. The very early treatment of cerebral palsy. Developmental Medicine and Child Neurology, 1967, 9, 373-39.

This article stresses that the best results will come from early treatment. For example, early recognition of cerebral palsy is important, since abnormal patterns of posture and movement become stronger as the child gets older. It states several principles and aims for treatment and gives information on normal motor development.

Bobath, B. Neuro-development treatment. Journal of American Physical Therapy, 1967, 47 (11), 1039-1041.

This article states that the concept of neuro-developmental treatment is based on two factors: (1) the interference of normal

maturation of the brain by the lesion, leading to retardation of arrest of motor development; and, (2) the presence of abnormal patterns of posture and movement, due to a release of abnormal postural reflex activity.

Bobath, B. Planning of treatment. Western Cerebral Palsy Centre: London, England. England, 1968, 1-2.

This article consists of seven points of interest which should be considered in planning treatment for the cerebral palsy child: type and strength of muscle tone; primative and fairly normal motor patterns; pathological (abnormal) patterns of posture and movement; basic automatic reactions; the way and to what extent the body parts are involved; the child's age; and the possibilities of contractures and deformities.

Bobath, B. The treatment of neuromuscular disorders by improving patterns of coordination. Physiotherapy, 1969, 47 (1), 32-39.

This article deals with normal postural reactions and their importance for voluntary movements. It states that the motor patterns of normal postural reactions develop in the child gradually during the first few years of life. These become highly selective patterns of coordination and thereby become automatic in the normal child but not in the cerebral palsied individual. Treatment principles and techniques are described.

Bobath, B. Short survey of problems and treatment of spastic children. Western Cerebral Palsy Centre: London, England. England, 1970, 1-2.

The problems and treatment discussed in this article include: increased postural tone with typical patterns of spasticity; associated reactions; co-contraction; and insufficient or absent righting and equilibrium reactions.

Bobath, B. Motor development, its effects on general development and application to the treatment of cerebral palsy. Physiotherapy, November 1971, 49 (11), 1279-1288.

This article stresses the importance of sensori-motor experience as a basis for learning in both early and later stages of development. Movement is stated to be of utmost importance in the child's development. The team approach is emphasized as the best approach to the total child.

Bobath, K. The neuropathology of cerebral palsy and its importance in treatment and diagnosis. Cerebral Palsy Bulletin, 1959, 1, (8), 13-33.

In this article cerebral palsy is defined and its etiology, incidence, and classification are surveyed. Particular reflexes

are described in reference to their relevance to the motor behavior of the cerebral palsy child. Treatment of this condition should follow neurological lines in order to inhibit abnormal reflex activity and promote normal reactions.

Bobath, K. The normal postural reflex mechanism and its deviation in children with cerebral palsy. Physiotherapy, 1971, 49 (11), 1286-1299.

This article defines the term cerebral palsy and explains some important related factors. It describes the normal development of a child and compares it with that of the cerebral palsy child. Other problems are also discussed, with techniques and materials for treatment given.

Bobath, K., & Bobath, B. An analysis of the development and standing and walking patterns in patients with cerebral palsy. Physiotherapy, 1962, 40, 6, 613-619.

This article describes the early childhood development of normal standing and walking patterns and explains how abnormal patterns result in the cerebral palsy child.

Bobath, K., & Bobath, B. The facilitation of normal postural reactions and movements in the treatment of cerebral palsy. Physiotherapy, 1964, 42, 8, 949-954.

This article deals with the techniques and patterns used for testing postural tone.

Bobath, K., & Bobath, B. Terminology of treatment techniques. The Western Cerebral Palsy Centre: London, England. England, 1970, 1-3.

This article lists the terminology of treatment techniques of the neurological developmental method. Included are: reflex-inhibiting patterns, key-points of control, inhibitory control, facilitation of spontaneous movements, tapping, and placing. Also included is a list of neurophysical terms and definitions.

Cragen, W., & Beter, T. The mentally retarded child and his motor behavior. Springfield, Ill.: Charles C Thomas, 1970.

This book deals with the concept that movement is the basis of learning and cognitive function. They do not specifically state the principles of Bobath, but their view can be enlightening in respect to the fact that movement is the core to the habilitation of the total child.

Crickmay, M. C. Speech therapy and the Bobath approach to cerebral palsy. Springfield, Ill.: Charles C Thomas, 1970.

This book deals with the neurophysiological principles that are the groundwork of the Bobath approach to the total child. The author shows how the principles of this approach can be applied and utilized in each area of physical, occupational, and speech therapy. A team approach is the key to the habilitation of the total child. Other areas described in detail are: motor behavior and speech in the cerebral palsied child; principles of speech therapy producing voice, articulation; and, language problems, psychological problems, and how to successfully assess these problem areas.

Finnie, N. P. Helping the young cerebral palsy child at home. New York, N. Y.: E. P. Dutton and Co., Inc., 1968.

This is a complete handbook for the parents of the young cerebral palsied child. It explains in complete detail all the specific areas and aspects of cerebral palsy.

Pothier, P. C. Therapeutic handling of the severely handicapped child. American Journal of Nursing, 1970, 71, 321-324.

This article presents the personal account of a nurse and her preparation in learning to teach children with cerebral palsy. The author spent one day a week for a year in a nursery of a state hospital gaining skills in these techniques. During this period she was introduced to the treatment techniques of Karl and Bertha Bobath. These facilitation techniques were incorporated into the daily care of the children, thereby extending the period of formal physical therapy into the normal day activities of the children.

VI. COGNITIVE DEVELOPMENT

Ball, T. (Ed.) A guide for the instruction and training of the profoundly reatrded and severely multi-handicapped child. California: Santa Cruz County Board of Education, 1971.

The guide consists of instructional plans which provide examples of activities and programs in specific curriculum areas which are intended as guides to curriculum planning. Each plan states objectives, prerequisites, methods, and activities. A section at the end discusses theoretical considerations involved in the philosophy of curriculum planning.

Ball, T. S. Itard, Sequin, and Kephart. Charles E. Merrill Publishing Co., 1971.

The initial section of this book is devoted to an analysis and evaluation of Itard and Sequin within a modern framework of reference. In the second segment educational approaches are related to escape-avoidance conditioning and generalized imitation. The final section is devoted to a review and evaluation of Kephart's theory and correlated treatment programs.

Block, J. D. Operant conditioning. Mental Retardation: An annual review. New York: Grune and Stratton, 1971.

Byles, T. Some observations on the teaching of nature study to severely retarded teenagers in a rural area. Teaching and Training, 1970, 8(4), 113-114.

Colwell, C. N. Teaching the profoundly retarded child through behavior shaping techniques. In Training the severely and profoundly mentally retarded. 1967, 3, 81-89.

Hollis, J. H. & Gorton, C. E. Training severely and profoundly developmentally retarded children. Mental retardation, 1967, 5, 20-24.

This paper is an overview of recent research applicable to the training of severely and profoundly developmentally retarded children. It briefly covers the following topics: prosthetic training, operant imitation, social reinforcement, eversive stimulation, feeding training, toilet training, and behavioral engineering.

Jeffrey, D. Increase and mainteance of verbal behavior of a mentally retarded child. Mental Retardation, 1972, 10, 2, 35-40.

In this study operant and imitative techniques were used in programming generalization of verbal behavior in a child.

Kaanianen, R. The factor structure of intellectual abilities and signal sight vocabulary learning at moderate and severe levels of preliterate mental retardation. Sweden: Gothenburg, School of Education, 1970.

Levett, L. A method of communication for non-speaking severely subnormal children. British Journal of Disorders of Communication, 1969, 4, 1, 64-66.

Martin, J. A. Mental retardation, Journal of Experimental Child Psychology, 1971, 9, 4, 3201. (Abstracts)

The data here suggests that in severe mental retardation after imitative behavior is acquired it may not be controlled by the same stimuli which regulated it during acquisition.

O'Conner, T. & Hermelin, B. Cognitive Deficits in children. Mental Retardation Abstracts, London England: Medical Research Council.

This article presents a brief comparison of the cognitive deficits of autistic and severely subnormal children. Linguistic perceptual, attentional and logical aspects of cognition are considered. It is suggested that a) in subnormal children the codine system may be impaired and b) in autistic children the selective extraction and categorization systems may be faulty.

Cequin, E. Idiacy and it's treatment by the physiological method. Columbia: Columbia University Teacher's College, 1907.

Itard explains the educational methods he used with Victor, the wild boy of Avengon.

Sontag, E., Burke, P., York, & Robert Considerations for serving the severely handicapped in the public schools. Education and Training of The Mentally Retarded. 1973, 8, 2, 20-26.

VII. BEHAVIOR SHAPING TECHNIQUES

Alpern, G. D. Education and care of moderately and severely retarded children. Seattle, Washington: Special Child Publications, 1971.

This is a basic book written to acquaint teachers with various teaching techniques, planning strategies, and important basic skills to be learned by mentally handicapped children. The activities discussed usually indicate a base level of performance and develop from that point. This book deals with some aspects of behavior modification.

Baker, B. Reinforcement therapy for behavior problems in severely retarded children. American Journal of Orthopsychiatry, 1971, 41, 124-135.

Six severely retarded children (I.Q. below 25) were treated in a small home-like living unit. The project emphasized the use of reinforcement techniques by regular attendents trained as therapists and the behavioral measurement of the target children and matched ward controls. Treatment was generally effective; however, less success was shown with retarded children displaying psychotic behaviors.

Beedle, R. Behavior observation techniques of learning screening of institutionalized mentally retarded children. American Journal of Mental Deficiency, 1966, 70, 675-682.

The purpose of this study was the development of an auditory screening technique which would afford a gross assessment of the hearing of chronologically young retardates and/or those manifesting behavioral patterns which negate the use of conventional testing procedures. Taped sounds were presented in free field to institutionalized MR subjects. Responses were scored on the basis of observed behavioral changes. Analysis of the data revealed that this technique did discriminate MR subjects with known hearing loss from those with normal hearing regardless of their primary institutional behavior.

Bersberg, G. Teaching the profoundly retarded self-help activities by behavior shaping techniques. American Journal of Mental Deficiency, 1965, 69, 674-679.

Six severely retarded children were placed in a special unit and an attempt was made to improve their self-help behaviors by principles of behavior shaping. Monthly ratings were made on a modified form of the Vineland Social Maturity Scale. All subjects showed substantial improvement. The greatest gain was obtained during the first month of conditioning. Some shortcomings of the study were discussed, but it was concluded that the procedures followed resulted in a valuable change in self-help behavior on the part of all subjects.

Bradtke, L. M. Intensive play: A technique for building affective behaviors in profoundly mentally retarded children. Education and Training of the Mentally Retarded, 1972, 7, 8-13.

This article discusses the value of intensive play in working with profoundly mentally retarded children. Adults work with only one child during a 30-minute play session which is specially planned for that child, using intensive play to develop responses to close body contact and physical stimulation and to break through the typical fearfulness and unresponsiveness of these children. Evaluation of the children's progress shows some success in improving rapport and creativity for previously unresponsive children.

Dekecki, P. R. Reviews of the literature relative to the behavior potential of the severely retarded. Trainable School Bulletin, 1964, 61, 65-75.

The present review deals with the knowledge of the behavior potential of the severely mentally retarded gained through experimental procedures. Issues relevant to the research are discussed, and a comprehensive review of the literature is presented historically. Findings and limitations of that research are discussed in terms of institutional practices and the need for more productive work with this population.

Edgar, C. L. Effects of sensory-motor training on adaptive behavior. American Journal of Mental Deficiency, 1969, 73, 713-719.

It was hypothesized that children in the sensory-motor period of development would show gains in adaptive behavior if given sensory-motor training. Eleven mental retardates were given individual sensory-motor training. A similar group had individual attention. Gesell Developmental Schedules were administered before and after eight months of training. Significant differences between gains of the two groups are discussed in relation to Kephart's Theory of perceptual-motor development and Piaget's theory of cognitive development.

Gardner, J. M. Behavioral competence and social and emotional behavior in the mentally retarded. American Journal of Mental Deficiency, 1970, 75, 168-169.

The relationship between intellectual level and social and emotional behavior was examined in an institutionalized mentally retarded population. Two subjects were randomly selected from each of three groups: moderately, severely, and profoundly retarded. The three groups did not differ in inappropriate social and emotional behavior.

Garfunkel, F. Probabilities and possibilities for modifying behavior of mentally retarded children: Tactics for research. Journal of Education, 1964, 147, 45-52.

This article deals with research efforts in correlating behavior with educational programs.

Giles, D. H. Toilet training institutionalized severe retardates: An application of operant behavior modification techniques. American Journal of Mental Deficiency, 1966, 70, 766-780.

The purpose of the study was to evaluate the use of operant behavior modification techniques in toilet training severely mentally retarded children in their usual institutional environment. The results of this study offer further evidence that operant behavior modification techniques can be an effective means of establishing self-care behavior in severe retardates.

Graziano, A. M. (Ed.) Behavior therapy with children. Chicago, Ill.: Aldine-Atherton, Inc., 1971.

This collection of papers and articles concerns the application of behavior modification procedures with children in a variety of problem areas. The text begins by providing introductory material on the general application of laboratory principles and laws of behavior to children's educational and clinical problems. This introductory section is followed by articles which include the potential use of electronic equipment in behavior modification; behavioral approaches to mentally retarded children in self-care skills, social behaviors, toilet training, and emotional disturbances; the modification of schizophrenic, autistic, and psychotic behavior in children in individual and group settings; and less severe behavior problems found in school situations, such as school phobia, hyperactivity, crying. The final section discusses the implications of the behavioral modification approach for both professional therapists and parents.

Hall, M. V. Managing behavior series. Lawrence, Kansas: H & H Enterprises, Inc., 1971-1972.

Written for teachers, teacher trainees, and parents, the six publications in this series offer a very basic introduction to the theory and application of behavior modification techniques. The series includes:

1. Behavior modification: The measurement of behavior
2. Behavior modification: Basic principles
3. Behavior modification: Applications in school and home
4. Behavior modification: New ways to teach new skills
5. Behavior modification: A teacher's guide to writing instructional objectives
6. Summaries of selected behavior modification studies

Hollis, J. H. Effects of social and non-social stimuli on behavior of profoundly retarded children. American Journal of Mental Deficiency, 1965, 69, 755-789.

This paper presents a method for observing and recording the effects of social and non-social stimuli on the behavior of profoundly retarded children. The results of this investigation show that specific forms of physical and social stimuli have definite and differential effects on the behavior of profoundly mentally retarded children. When other directed responses (grasping, physical contact with the environment) had a high frequency, the self-directed responses occurred at a low frequency.

Hollis, J. H. Social dominance behavior of profoundly retarded children. American Journal of Mental Deficiency, 1965, 70, 363-372.

Social dominance behavior in a group of six female profoundly retarded children was studied during pair (dyad) and group interactions for a period of one year. Behavior of dyads (15) was observed in the Wisconsin General Test Apparatus (WGTA) and free-field. The group was tested in a free-field under empty and novel object conditions. The results from WGTA dyad tests showed a linear dominance hierarchy that increased in stability over time. When the dyads were tested in the free-field, there was a small decrease in the stability of the dominance-subordinative relationships. Dominance testing of the group resulted in almost complete submission for the 3 lowest ranking subjects.

King, D. Patterns of institutional care for severely subnormal. American Journal of Mental Deficiency, 1968, 72, 706-709.

This paper seeks to document the differences in the patterns of everyday life activities among three comparable groups of severely subnormal but fullambulant children. The three groups were cared for respectively in a hospital ward, a voluntary home, and a local authority hostel. The pattern of life in the hospital was regimented and unstimulated, while in the hostel it was individualized and enriching. The pattern for the voluntary home included elements found in both the other institutions.

Minge, M. R. Teaching self-help skills to profoundly retarded patients. American Journal of Mental Deficiency, 1967, 71, 864-868.

Six profoundly mental retardates were taught self-help skill by psychiatric technicians following a step-by-step program. Training was given for 2 months in two individual fifteen minute sessions per day. Subjects correct responses to directions were reinforced with food and praise. Comparison of experimental subjects pre-, mid-, and post-training situational test results showed significant improvement in skills. Experimental subjects had significantly higher test scores than did control subjects. Subjects' rate of progress through the 36 major substeps of the program also demon-

strated the feasibility of teaching self-help skills to profoundly retarded patients.

Rass, S. M. Trace and delay classical eyelid conditioning in severe and profound retarded subjects as a function of interstimulus interval. American Journal of Mental Deficiency, 1972, 77, 39-45.

The results indicated that the traced conditioned stimulus was an effective stimulus. The data are discussed in terms of the retarded person's stimulus trace and/or input deficits.

Rice, M. K. Operant conditioning technique for use in physical rehabilitation of the multiply handicapped retarded patient. Physical Therapy, 1968, 48, 342-346.

This article shows that behavior modification techniques can be applied to individuals regardless of intellectual level and physical condition. In using behavioral techniques with profoundly mentally retarded non-ambulatory patients, it is important to determine individual range of possible motor responses. Also discussed is the system of reward, in which the patient is given a reward (usually food) for each successful approximation in the successive steps.

Sloop, M. W. Institutionalized retarded noctural enurectics treated by a conditioning technique. American Journal of Mental Deficiency, 1973, 77, 717-721.

The efficacy for institutionalized retarded nocturnal enurectic of a conditioning treatment consisted of an electrical buzzer warning device set off by the art of urinating in bed was assessed using 21 experimental subjects matched with 21 control subjects on age, sex, measured IQ, and number of wet nights over a 7-night baseline period. Experimental subjects received treatment for 11 weeks, or until they received 50 buzzer activations, or until they remained dry for 14 successive nights. Eleven experimental subjects were conditioned successfully.

Smith, D., & Murphy, W. K. A new world for Lori. Mental Retardation in Illinois, 1969, 3, 3-5.

The "short-term habit training" program at Andrew McFarland Zone Center (Illinois) trains 3-15 year old severely and profoundly mentally retardates in self-help skills. Expensive social, medical, and developmental information is collected on each child before admission to the program. Mothers are encouraged to participate in training to reduce the separation problem for the child, facilitate adjustment, and permit staff observations of mother-child relationship.

Thompson, J. (Ed.) Behavior modification of the mentally retarded. New York: Oxford University Press, 1972.

This book was developed as a result of the authors' and editors' concern about the inadequate, often inhumane, conditions found in many state institutions for the mentally retarded. It documents how one institution, the Faribault State Hospital in Minnesota, transformed itself from a largely custodial institution into an educational therapeutic environment through the systematic application of behavior mldification procedures.

Wolf, M. Application of operant conditioning procedures to the behavior problems of an autistic child. Behavior Research and Therapy, 1964, 1, 305-312.

Operant conditioning techniques aimed at modifying temper tantrums, bedtime problems, eating problems, and lack of verbal behavior were implemented by parents and hospital attendants.

VIII. SELF-CARE DEVELOPMENT

Alpern, G., & Boll, T. Education and care of moderately and severely retarded children. Seattle: Special Child Publications, Inc., 1971.

The importance of teachable steps, consistency in instruction, rewards, and repetition in the training of self-care skills in severely retarded children are discussed in detail.

Bakwin, J., & Bakwin, R. Behavior disorders in children. Philadelphia: W. B. Saunders Company, 1972.

Although not specifically oriented toward the severely and profoundly retarded child, this book is helpful in outlining basic procedures for self-care training. Before such training can be successful, certain characteristics in the child must be present, such as suggestibility, imitativeness, and positive regard for praise.

Ball, T., Seris, K., & Payne, L. Long-term retention of self-help skill training in the profoundly retarded. American Journal of Mental Deficiency, 1971, 76, 3, 378-382.

A study involving the retention of dressing and undressing skills was conducted with six severely retarded boys following their participation in a ninety-day intensive training program. Although undressing skills tended to decline after return to the regular ward environment, dressing skills showed a significant amount of improvement when they measured four years later.

Bensberg, G., Colwell, C., & Cassel, R. Teaching the profoundly retarded self-help activities by behavior shaping techniques. American Journal of Mental Deficiency, 1965, 69, 5, 600-679.

In order to improve the self-care skills of six severely retarded children, a project was conducted wherein they were placed in a special unit and trained intensively according to the basic principles of behavior shaping. Each subject was rated monthly on the Vineland Social Maturity Scale, with all six subjects showing continued marked improvement.

Bluhe L. Teaching the retarded visually handicapped. Philadelphia: W. B. Sounders Company, 1969.

Self-care skills discussed include grooming of the hair and brushing of the teeth. The teacher or parent should take the child's hand and go through the actions of combing and brushing. Praise, diligent instruction, and a short hair style make it easier to produce a desired result.

Buckler, B. Living with a mentally retarded child: A primer for parents. New York: Hawthorn Books, Inc., 1971.

Specific methods which parents can implement in training their retarded child in feeding, bathing, and toileting skills are explained in detail.

Connor, F. P. & Talbot, M. E. An experimental curriculum for young mentally retarded children. New York: Teachers College Press, 1970.

Intensive curriculum programs for training one hundred and ninety behaviors, including self-help skills, are provided. For each item, a five-point descriptive rating scale and a five-point descriptive programming scale are included. These scales each constitute a set of short-range goals toward which the teacher of the retarded child can work. They are useful in providing an objective measure of performance and a breakdown of the successive steps involved in learning a particular task. The various programs have been developed with the aim of providing the necessary experiences in a classroom setting for development in several major areas of individual functioning.

Ellis, N. International review of research in mental retardation. New York: Academic Press, 1966.

The use of behavior shaping techniques for training severely retarded children in self-care skills is emphasized. The results of numerous related research projects are discussed, with the general consensus being that operant conditioning methods are most efficacious in working with children who function within the lower ranges of mental retardation.

Eyner, R., Tarjan, G., & Cassady, M. Natural history of acquisition of basic skills by hospitalized retarded patients. American Journal of Mental Deficiency, 1970, 75, 2, 120-129.

The increasing number of younger, more severely retarded children being admitted to institutions is discussed, with emphasis on the need for the development of appropriate training programs for these individuals. A study comparing a group of residents receiving "standard" institutional treatment with another receiving more intensive care was conducted. It was found that a significantly greater amount of improvement occurred in the latter group. Improvement in toileting skills has more frequent in both groups than was improvement in ambulation.

French, E., & Scott, J. Child in the shadows: A manual for parents of retarded children. Philadelphia: J. B. Lippincott Company, 1960.

The complexities involved in training a retarded child in basic self-care skills are outlined. Emphasis is placed on breaking tasks down into their simplest parts and rewarding the child for each success. Behavior modification techniques are discussed in layman's terms, and the manner in which they are applicable to instruction in such areas as toilet training and bathing is explained. Attention is also given to the necessity of training.

Gardner, W. Behavior modification in mental retardation: The education and rehabilitation of the mentally retarded adolescent and adult. Chicago: Aldine-Atherton, Inc., 1971.

The development of eating, dressing, and toileting skills in the severely and profoundly retarded is discussed. Attention is given to the research performed by Bensberg in this area, with particular emphasis on behavior shaping and chaining concepts. Self-feeding is regarded as one of the easiest skills to teach because of the immediate reinforcement which is received for responding appropriately. With regard to training in dressing behavior, the improtance of combining verbal and visual cus is emphasized. Because of the difficulty usually encountered in teaching toileting skills to the severely and profoundly retarded, the need for intense, systematic programs is indicated.

Grotz, R., Henderson, J., & Katz, S. A comparison of the functional and intellectual performance of phenylketonuric, anoric, and Down's syndrome individuals. American Journal of Mental Deficiency, 1972, 76, 6, 710-717.

The Index of Independence in Activities of Daily Living (ADL) scale was utilized in comparing the functional and intellectual abilities of PKU, anoxic, and Down's individuals. Such functional skills such as bathing, dressing, toileting, transferring, continence, and feeding were rated. Results showed that PKU individuals were the least capable with regard to both intellectual performance and self-care skills. Anoxic subjects were the most intelligent and had an intermediate functional status. Down's individuals tended to show the greatest amount of independence in self-care and maintained an intermediate position with regard to intelligence. Suggestions are made for the use of the ADL or Vineland Social Maturity Scale along with standardized intellignece tests in evaluating severely retarded individuals.

Groves, I. & Carroccio, D. A self-feeding program for the severely and profoundly retarded. Mental Retardation, 1971, 9, 13, 10-12.

Simple operant conditioning techniques were used in a project to teach sixty severely and profoundly retarded female institutional residents to eat with a spoon. Each time a subject began to eat with her hands, her food tray was removed for ten seconds, and

she was instructed to use her spoon. The tray was returned to the table when she picked up the spoon. These techniques can be modified for use in the training of skills in several other areas of functioning.

Johnson, E., Gove, R., & Ostermeier, B. The value of functional training in severely disabled institutionalized brain damaged children. American Journal of Mental Deficiency, 1963, 67, 6, 860-864.

A study was undertaken with thirty non-ambulatory, severely disabled, institutionalized brain damaged children between the ages of six and fourteen to determine the value of intensive functional training in basic self-care skills over a nine month period. Seven of the patients learned to feed themselves with a spoon, eight learned finger-feeding, five learned to walk with assistance, one learned to walk without assistance, and six learned to get from the wheelchair to the bed and toilet. It seems evident that if children functioning within the lower ranges of intelligence are given the opportunity to perform at their maximum level they often will attain skills which previously had been believed to be beyond their ability.

Lebeck, M. & Elliott, C. Toilet training for profoundly retarded with a limited staff. Mental Retardation, 1970, 8, 3, 48-50.

An application of the concept of successive approximations was used in a practical research project which attempted to teach toileting skills to one hundred and three profoundly retarded institutional residents. Initially, the subjects were reinforced with material rewards. As training progressed, rewards were withheld until the subject completed succeeding steps in the toileting procedure. The program resulted in a marked reduction of soiled linen in the ward and a significant decrease in the frequency of accidental defecations.

Lipton, R. & Provence, S. Infants in institutions. New York: International Universities Press, Inc., 1962.

Maternal care of infants and its influence on development is discussed. The use of a propped bottle in institutions for feeding infants under eight months of age has detrimental effects quite often. These infants do not usually come to associate their state of discomfort with hunger or comfort with being fed by a human being, nor do they receive the wide variety of sensations associated with being held by a maternal figure. Feeding is a biologically and psychologically crucial experience around which there are many communications between mother and infant. The multitude of stimuli that are inherent in the procedure provide the child with a wealth of learning opportunities without which satisfactory

development is difficult or impossible. The situation is particularly debilitating for the severely or profoundly retarded child who needs as much stimulation as possibly at an early age if he is to develop to his full potential.

Lowmer, E., & Klinger, J. Aids to independent living: self-help for the handicapped. New York: McGraw-Hill Book Company, 1969.

Numerous illustrations of devices and specific techniques for training and assisting individuals with severe physical impairments in basic self-care skills are provided in this book, along with detailed explanations of their various functions. The emphasis is on helping the handicapped individual to achieve his highest possible level of functioning in all areas of daily living. Self-care skills discussed include self-feeding and drinking; toileting; bathing; care of hair, teeth, and nails; shaving; dressing; and care of clothes.

Luckey, R. & Chandler, P. Demonstration habilitative and self-care nursing projects for multi-handicapped retardates. Mental Retardation, 1968, 6, 5, 10-12.

The dehumanizing and debilitating effects of traditional custodial care that are blatantly evident in many institutions are condemmed. The goals of the program under study stress optional independence in ambulation, self-feeding, toileting, and dressing. Physical therapy should be given when required to prevent physical deterioration. There should be accelerated psychological and social growth and promotion of body image and self-concept. The children chosen for the program appeared to exhibit unused intellectual and physical potential in conjunction with a need for special physiotherapy. The results showed that the conditions of the severely handicapped can be considerably improved. It also showed that expensive and laborious physical care over extended periods of time is not necessary.

Martin, G., Rehce, B., Bird, E., Jensen, V., & Darbyshire, M. Operant conditioning in dressing behavior of severely retarded girls. Mental Retardation, 1971, 9, 3, 24-31.

The manner in which psychiatric nurses and nurses' aides were trained to use operant conditioning principles to teach severely retarded girls to dress with several clothing items is described. These girls were from seven to twenty years of age and had intelligence quotients from the forties to untestable. They were trained in fifteen to thirty- minute periods, on a one-to-one ratio, and by going step by step with each article. Verbal praise and candy were given for correct responses, and the child was ignored for ten seconds if the response was incorrect. The attention span was greatly improved after three sessions, and responses in the ward showed improvement. There was a liberal social reinforcement if self-dressing was accomplisher in the wards by the girls themselves.

Martin, G., McDonald, S., & Omichinshi, M. An operant analysis of response interactions during meals with severely retarded girls. American Journal of Mental Deficiency, 1971, 76, 1, 68-75.

A project designed to decrease the maladaptive mealtime behaviors (slopping food, yelling, playing with utensils, and eating with hands) of four severely and profoundly retarded, institutionalized females between the ages of none and nineteen was conducted. An attempt was made to decide whether slopping could be more effectively eliminated by social approval for instances of non-slopping or by presenting a time-out period for slopping behavior. The latter was found to produce better results, with improvement in other areas of behavior also noticed.

Minge, M. & Pall, T. Teaching of self-help skills to profoundly retarded patients. American Journal of Mental Deficiency, March 1967, 71, 5, 864-868.

In a study designed to measure the effectiveness of intensive training programs in self-care for the profoundly retarded, six such individuals were taught simple skills related to dressing. Each task to be taught was broken down into small steps, and correct responses were consistently reinforced. The experimental subjects showed a significantly greater amount of improvement than did a control group which did not receive this intensive training. The rate of improvement was greater during the earlier part of the training period, probably because the behaviors emphasized at that time were easier to accomplish and also because they may have already been in the individual's repertoire. Generally, the results demonstrate the feasibility of providing training in self-care based on simple behavior modification techniques for profoundly retarded institutional residents.

Reese, R. Establishing spoon-feeding behavior and eliminating finger-feeding and spoon-dropping behavior. (Unpublished manuscript.) White Haven State School and Hospital, 1971.

The profoundly retarded child is unable to respond to the usual procedures for establishing self-feeding skills. He does not understand this task if it is presented in the normal procedure and fails to feed himself if unassisted. Therapists analyzed the behavior tasks into simple parts that were systematically presented. The rewards were supplied emphatically at appropriate times.

Rentfrow, R., Rentfrow, D. Studies related to toilet training of the mentally retarded. American Journal of Occupational Therapy, 1969, 23, 5, 425-430.

The research pertaining to the utilization of operant techniques in toilet training the severely and profoundly retarded is reviewed. Because operant conditioning techniques do not require

verbal ability on the part of the retardate and also because they can be easily learned by attendants and parents, these methods have attained increasing popularity. Several studies on toilet training, however, report an immediate regression to former habits upon return to the regular ward environment. The reduction in extraneous stimulation and increase in attention which the child received when being trained may be the reason for this. It may be hypothesized, therefore, that a combination of operant procedures and a propitious environment may be the most efficacious means of training severely and profoundly retarded children in toilating skills.

Spencer, R., Tenerlin, M, & Trousdale, W. Some correlations of bowel control in the profoundly retarded. American Journal of Mental Deficiency, 1968, 72, 6, 879-882.

A study was conducted with thirtyeight severely and profoundly retarded institutional residents to determine the relationship of their initial degree of bowel control and progress in learning bowel control with measures of leg coordination, sociablity, negativism, proneness to emotional upset, and presence of neurological impairment or seizures. Aithough sociability, negativism, proneness to emotional upset, and absence of seizures are correlated with an initial degree of bowel control, there is no significanct relationship between these characteristics and learning bowel control. Profoundly retarded individuals who possess at least partial bowel control tend to be more intelligent, more sociable, less emotional, and less negativistic than those who are wholly incontinent. The type of program proposed by the authors of this study shows most promise for those retarded individuals who are totally incontinent as opposed to those who are partially trained.

Steele, S. Nursing care of the child with long-term illness. New York: Appleton-Century-Crofts, Educational Division, Meredith Corporation, 1971.

One of the topics discussed in this book is the use of various devices for training the child with severe motor impairment to feed himself. No matter how tedious and messy the process, it is of utmost importance to allow the child to learn to do so. Such items as a deep dish with sides and a suction cup on the bottom of the dish are helpful in keeping the food on the plate and the plate on the table. In teaching a motor-handicapped child to drink, the use of a training cup with a cover and spout is often helpful. Various illustrations of specialized utensils are included. Although this book does not deal specifically with the severely and profoundly retarded, it is helpful in that so many of these children are afflicted with one or more kinds of motor impairment.

Treffny, D., Martin, G., Samals, J., & Watson, O. Operant Conditioning grooming behavior of severely retarded girls. Mental Retardation, 1970, 8, 4, 29-33.

This article discusses a program in which eleven severely retarded girls were to be taught to wash and dry their hands and faces. A regular nursing staff could effectively run the program. Initially, all subjects needed physical help despite the fact that they had none or only slight upper extremity problems. The girls were administered only anti-convulsive drugs while participating in the twelve-step program. After nine weeks, seven of the eleven subjects needed no guidance. The basic behavioral principles that are utilized include positive reinforcement, time out from positive reinforcement, punishment, and fading. The repeated replication of these results with similar subjects increases confidence in their generality.

Watson, L. S. Applications of behavior-shaping devices to training severely and profoundly mentally retarded children in an institutional setting. Mental Retardation, 1968, 6, 6, 21-23.

The use of automated devices to assist in shaping various behaviors is advocated. These should be utilized not as substitutes for ward personnel but rather as supplements. One of the major advantages of using these devices in behavior modification programs is that they tend to be more effective in detecting and promptly reinforcing desired responses. One area where they have been used extensively is in the toilet training of severely and profoundly retarded individuals. The training of other self-care skills could probably also be made more effective with the expanded utilization of electronic devices for discriminating between responses and controlling reinforcement.

Watson, L. S. How to use behavior modification with mentally retarded and autistic children: Programs for administrators, teachers, and nurses. Columbus: Behavior Modification Technology, 1972.

Several programs utilizing the principles of shaping and reinforcement for the training of self-help skills are described in detail. Specific programs are outlined for each of the following: toileting; eating with utensils; taking off pants, shirt, socks, and shoes; putting on pants, shirt, socks, and shoes; bathing, and tooth-brushing. Tasks are broken down into small, simple procedures and expected responses stated. Consideration is given to the necessity of finding an appropriate reinforcer, that is, one which will motivate the child to do his best. In addition, the maintenance of eye contact as a preliminary requirement before other behavior can be taught.

Watson, L. S. Child behavior modification: A manual for teachers, nurses, and parents. New York: Pergamon Press, Inc., 1973.

A description is provided of the teaching of new behavior to autistic and retarded children by the shaping technique. This technique is used in conjunction with a reinforcement procedure and is very effective for teaching self-care skills to the severely and profoundly retarded. This successive approximation technique is used to teach a single behavioral component, such as putting on a short-sleeved pullover shirt. It can be taught in approximately five steps with Koolade or candy used as reinforcers. The training progresses at the child's own pace, and trainer help gradually fades out. Verbal prompts are used to keep the child moving and to successfully complete the training.

IX. TOILET TRAINING

Azrin, N. & Foxx, R. A rapid method of toilet training the institutionalized retarded. Journal of Applied Behavior Analysis. 1971. 4, 2, 89-99.

A type of toilet training program in which nine male respondents received positive reinforcement for appropriate elimination in an attempt to accomplish rapid toilet training.

Bates, K. K. Use of multi-sensory reinforcement in toilet training retardates. Costa Mesa: Farview State Hospital, 1970.

This describes a behavior modification program in toilet training, uitilzing reinforcing properties of music, candy, cold drinks, and television.

Bensbery, J., Colwell, C., & Cassel, R. Teaching the profoundly retarded self-help activities by behavior shaping techniques. American Journal of Mental Deficiency, 1964-65, 69, 674-680.

Six severely retarded children were placed in a special unit and an attempt was made to improve their self-help behavior by the principles of behavior shaping.

Bensberg, J. J. Teaching the mentally retarded, a handbook for ward personnel. Atlanta: Southern Reginal Educational Board, 1965.

This manual presents principles and methods for teaching the mentally retarded to be as independent as possible.

Colweel, C., Richards, E., McCarver, R., & Ellis, N. Evaluation of self-help habit training. Mental Retardation, 1973, 11, 14-18.

The training program was investigated at the Columbia State School, Louisiana, a new short-term residential facility for intensive self-help training for the severely retarded. Preliminary data is given regarding the extent to which certain children will benefit from self-help habit training.

Dittmann, L. L. The mentally retarded child at home: A manual for parents. Washington, D.C.: Children's Bureau, Welfare Administration, 1969.

This manual concentrates mainly on day-to-day activities for young retarded children.

Ellis, N. R., Toilet training the severely defective patient: A stimulus - responce reinforcement. American Journal of Mental Deficiency, 1963, 68.

The aim of this paper is to present a theoratical analysis of "toilet-behavior" from the viewpoint of Molar Behavior Theory and to deduce implications for a training program. A stimulus reinforcement paradigm is adopted.

Gardner, J. M. Behavior modification in mental retardation. Crient, Ohio: Crient State Institute, 1970.

This annotated bibliography covers literature related to the applications of behavior modification to the training of the mentally retarded.

Giles, D. K. & Walf, M. M. Toilet training institutionalized severe retardates: An application of operant behavior modification techniques. American Journal of Mental Deficiency, 1966, 70, 5, 766-780.

The use of operant behavior modification techniques was evaluated in toilet training severely mentally retarded children in their usual institutional environment.

Gorton, C. E. & Hollis, J. H. Redesigning a cottage unit for better programming and research for the severely retarded, Mental Retardation, 1965, 3, 16-21.

To meet needs evident at the state hospital and training school, a system of care, treatment and training for the severely mentally retarded was developed.

Hollis, J. H. & Jorton, C E. Training severely and profoundly developmentally retarded children, Mental Retardation, 1967, 5, 20-24.

Research application to the training of severely retarded children is surveyed. Surveys on behavior modification are discussed.

Hundziat, M., Maurer, R. A. & Watson, L. S. Operant conditioning in toilet training of severely retarded boys. American Journal of Mental Deficiency, 196566, 70, 120-125.

Twenty-nine severely retarded boys with IQ's ranging from 8-33 and chronological ages ranging from 7-14 and free from major physical handicaps were selected for a controlled study designed to test the efficency of operant conditioning for toilet training.

Izutsu, S. A modivation and training program for the very severely and profoundly mentally retarded, Occupational Therapy for the Multiply Handicapped Child, 1965, 278-98.

A self-help training program for the profoundly mentally retarded at Waimano training School in Hawaii was presented.

Jorelick, M. C. Mother's patience key to toilet training. Children Limited, 1968, 17, 6, 7.

Energy, time and patience are needed to toilet train a retarded child. His abilities should not be underrated nor should he be overrated unrealistically.

Kimbrell, D. L. Institutional Environment developed for training severely and profoundly retarded. Mental Retardation, 1967, 5, 34-37.

The special problems of training and caring for 20 institutionalized severely mental retarded females with agressive and destructive behavior are discussed.

Levine, M. L. & Elliott, C. B. Toilet training for profoundly retarded with limited staff. Mental Retardation, 1970, 8, 3, 48-50.

One hundred and three profound retardates were toilet trained with limited staff in a ten week program. Training was facilitated by a ten week course, practical applications of behavior modification. After the program a marked reduction of accidents was noticed.

Loltman, W. Toilet training. American Journal of Mental Deficiency, 1967, 71, 4, 551-557.

The congitudinal changes of toilet training patterns as related to variables of I. Q., chronological age, length of institutionalization, and behavior problems were investigated.

Rosenzweig, L. E. & Cong, J. Understanding and teaching the dependent retarded child. Conneticut: The Educational Publishing Corp., 1960.

Includes plans and procedures for developing a toilet training program.

Ross, P. Development of an intensive habit: Training unit at Austin State School. Mental Retardation, 1965, 3, 12-15.

A pilot project to develop self-help skills in 30 severely retarded children utilized operant conditioning techniques.

Spencer, R. L., Termerlin, M. K., & Trousdale, W. W. Some correlation of bowel control in the profoundly retarded. American Journal of Mental Deficiency, 1968, 72, 6, 879-882.

The initial degree of bowel control in a six week training program was determined for 38 severely retarded subjects and related to measures of leg coordination, socialbility and presence of brain damage and seizures.

Van Wagenen, R. K., Meyerson, L., & Kerr, N. J. Rapid toilet training learning principles and prothesis. Proceedings of the 77th Annual Convention of the American Psychological Association, 1969, 4, 2, 781-782.

The training program was based on a sequence of forward-moving events including repeated exposure to the discriminative auditory stimuli in the presence of body sensation associated.

X. PRE-LANGUAGE, LANGUAGE & COMMUNICATION DEVELOPMENT

Anderson, R. M., Miles, M., & Mathey, P. A. Communicative evaluation chart from infancy to five years. Cambridge, Mass.: Educator Publishing Service, Inc., 1964.

The chart gives an idea of a child's overall abilities or disabilities in language and performance. Listed items deal with two major areas: coordination of the speech musculative, development of hearing acuity, and more advanced stages irrelevent to the severely retarded; the evaluation of physical well-being, motor coordination, visual-motor-perceptual skills. The evaluator uses the codes of + for present, - for not present, ± for fluctuating. For example, the three month level lists, one one side, a strong cry, sucking and swallowing, a reaction to sudden noise, and, on the other side, listing may be non-allergic, good digestion, visually alert. The six month level lists, on one side, such things as tongue reacting to sucking, localizes source of sound, babbles several sounds, and, on the other side, such characteristics as good head balance, lifts a cup, transfers objects from one hand to the other. Some eight month listings include listening, imitating sounds, smiles and pats a mirror.

Bangs, T. Language and learning disorders of the pre-academic child: With curriculum guide. New York: Appleton-Century-Crofts, 1968.

Includes assessment forms, a way to adapt curriculum to the hearing impaired, and hints for parent programs. Growth and development sequences are included. Dr. Bangs represents a population of educators who see language as being on a continuum with reading skills.

Blaskell & Jensen. Stress and word position as determinants of imitation in first language learners. Journal of Speech and Hearing Research, 1970, 13, 193-202.

This study investigated stress and word position as decoding cues for first language learners. Three levels of stress were assigned systematically across a set of four-syllable nonsense strings. Word position was defined as the serial occurance of the syllables in each string. Children, ages twenty-eight to thirty-nine months, imitated each string as it was presented from a loudspeaker. The responses were tape recorded and transcribed by three phonetically trained judges. The subjects imitated significantly more often those syllables with primary stress and those occuring in the final position. This suggested that, when imitating adult sounds, first language learners decode those sounds by attending to the most stressed and the final items of the utterances.

Baer, D. M., & Guess, D. Teaching productive noun suffixes to severely retarded children. American Journal of Mental Deficiency, 1973, 77, 5.

Procedures of differential reinforcement and imitation were used to teach mentally retarded children productive noun suffixes when labeling stimuli exemplifying the verb form of an action or activity. Specifically, subjects were taught to convert verbs to nouns by adding the (er) morpheme. Training continued until the subjects were required a minimum number of trials to reach criterion for each verb presented, at which point they consistently produced the correct response on the first presentation of each new verb. Experimental control of the training procedures was demonstrated by teaching the grammatical misuse of the (ist) morpheme, rather than the (er) morpheme, when labeling verbs.

Bricker & Bricker. A program of language training for the severely language handicapped child. Exceptional Children, 1970, 37, 101-111.

A sequence of language training procedures for the severely language handicapped child is presented. Language components specifically dealt with include operant audiometry (used with all who are functionally mute or severely language deficient), receptive vocabulary, imitation, naming, and sentence production. The basis for the development of the procedures used can be largely attributed to Skinner. The intent of the article is to present some major considerations in language training. Other sources such as linguistic models should be investigated in order to develop the content of language programs.

Crickmay, M. C. Speech therapy and the Bobath approach to cerebral palsy. Springfield, Ill.: Charles C Thomas, 1966.

The book deals with the three areas of therapy: physical, occupational, and speech. Crickmay tells us that basic speech therapy can be given even to a severely handicapped child long before any other possible formal instruction. Nonverbal communication starts with child-mother relationship, this leading to a pattern of communication with others. Communication comes through touch... affection, then through sound...voices and their intonations, then through his sounds...crying, gurgles, etc., and then through sight... facial expressions. One-to-one relationships with an institutional child should be considered. Some pre-speech techniques are mentioned: working with general condition and muscle tone; using the supine position for limiting gross reflexes; manipulation of head, neck, jaw, cheeks, chin, lips, tongue, and swallowing, drooling, sucking, biting.

Gorham, W. Speech, language and hearing program: Purpose and techniques. Mental Retardation: Selected Conference Papers. R. C. Scheerenberger (Ed.). Springfield, Ill.: Illinois Mental Health Department, 1969.

Types of therapy which will benefit the severely and profoundly retarded include language development and stimulation, hearing and auditory training, and medical treatment. Language stimulation and

instruction in the proper use of a hearing aid can be provided in an institution or school. Other problems should be referred to the appropriate agency. A nonclinician can provide language stimulation for young MR children by emphasizing the development of those eating habits necessary to speech (sucking, chewing, and swallowing). Language stimulation for older MRs should begin with the use of simple words which emphasize the development of key sounds. Simple action verbs, adjectives, and verbs, and otherparts of speech should be gradually introduced. As words are learned, they should be reinfroced.

Gray, B. B., & Ryan, B. O. A language program for the nonlanguage child. Champaign, Ill.: Research Press, 1973.

The authors tell us the nonlanguage child most generally has some type of nonvebal language, perhaps thought of as a gesture language. Whether autistic, brain injured...the teaching job is the changing of the child's code to language.

Guralnick, M. J. A language development program for severely handicapped children. Exceptional Children, 1972, 39, 1, 45-49.

In most educational settings intensive individual attention is not possible with today's shortage of professional staff. So this program, based on behavioral principles, was to develop verbal activity in severely handicapped children, and was implemented by college students. The subjects were of varied diagnosis, including autism and different forms of brain damage, and were not amenable to formal testing. Most had the verbal capacity of nonfunctional sounds and no imitation of speech sounds or motor behavior was depicted. Thus, they were placed at the initial communicative level of establishing eye-eye contact and imitating simple motor responses. The instructor provided a discriminative stimuli... e.g., verbal statement or command...modeled the scheduled behavior, and reinforced any imitation. Physical guiding, eye contact upon calling a child's name, etc., were applied techniques. The results were very positive. Five of the eight children progressed one level or more.

Hagen, C., Porter, W., & Brink, J. Nonverbal communication: An alternative mode of communication for the child with severe cerebral palsy. Journal of Speech and Hearing Disorders, 1973, 443-455.

This article discusses the need of an electronic signal system used to communicate basic needs for severely mentally retarded cerebral palsied children.

Hall, S. M., & Talkington, L. W. A suggested language development program for severely and profoundly retarded. Journal for Special Educators of the Mentally Retarded, 1970, 6, 2.

A basic sequence of developmental phases, roughly ordered according to language acquisition stages in normals, has been conceived as a

functional language system for the severe and profound mentally retarded. The beginning two phases deal with receptive modalities, commands and concept phases focusing upon the expressive aspects of language. The phases, an attempt to divide language into specific content areas, conform to sequential tasks according to level of difficulty. Two frameworks are implied within each phase -- a group approach where MRs interact with and learn from their peers, and direct reinforcement paradigm wherein positive responses are shaped gradually toward the desired goals of functional language usage.

Hartung, J. R. A review of procedures to increase verbal imitation skills and functional speech in autistic children. Journal of Speech and Hearing Disorders.

This article reviews the importance of identifying the major deficits and outlines some procedures. Quite specific and behaviorally described.

Hebb, L., & Tucker. Language, thought and experience. Modern Language Journal, 1971, 55, 212-221.

This article discusses the modes of human learning and language learning in relation to environment and experience. It has attempted to redirect the line of thought of those interested in language by restating and expanding a model of learning which appears to have been neglected by psychologists studying language.

Hedrick, D. L., & Christman, M. A. Programming for the antecedent event in therapy. Journal of Speech and Hearing Disorders, 1973, 339-344.

This process for systematically planning the antecedent event is described, and includes data collecting from the communicative environment to be used in cueing.

Larson, T. Communication for the nonverbal child. Academic Therapy, 1971, 6, 305-312.

A language of signs is being taught to multiply handicapped children in the Orange County Development Centers. This sign language is not intended to replace speech, but rather, it is intended to help stimulate oral language. The intent of the program is to help nonverbal children communicate. The people of this program hope that they will not only talk with their hands, but that the added visual and oral stimulation they receive simultaneously with the sign presentations will help them break through the barrier of silence. The development of sign language should follow the same sequence, from infancy to whatever level of efficiency the child can attain, as is followed for oral language acquisition.

Lillywhite, H. S., & Bradley, D. P. Communication problems in mental retardation: Diagnosis and management. New York: Harper and Row, 1969.

An easily read basic book of information which introduces differential diagnosis, is developmentally oriented, and deals with disorders in terms of communication.

Levett, L. M. A method of communication for nonspeaking severely subnormal children. British Journal of Disorders of Communication, 1969, 4, 1.

At Meldreth School, England, the severely mentally retarded (age 5-16) with physical handicaps were enrolled in a communication development program which was successful to varying degrees with 85% of the students. Of the twelve students who did not improve, seven were classified as deaf, one was grossly dysarthric, and four understood speech but did not speak. Of the five methods considered, mime (the use of facial expression, hand movement, and whole body movement) was selected as the method of communication. A 100 mime vocabulary was selected and appropriate gestures were developed. The words were chosen from the vocabulary of the students, and a list of words suggested by psychologists and school staff.

McLean, J. E., Yoder, D. E., & Schiefelbusch, R. Language intervention with the retarded. Baltimore, Md.: University Park Press, 1972.

The programs in this book are detailed and more useful to the experienced teacher or therapist than to the initiate. There is an assumption of knowledge about programming.

McLean, L. P., & McLean, J. E. A language training program for nonverbal autistic children. Journal of Speech and Hearing Disorders, 1974, 186-193.

A description of an experimental program which taught nonverbal autistic children to respond to a limited number of social transactions using plywood word symbols. May suggest other procedures to the creative programmer.

Mowrer, D. E. Transfer of training in articulation therapy. Journal of Speech and Hearing Disorders, 1971, 427-445.

Some concrete suggestions for transference of training.

Rutter, M., & Martin, J. A. M. The child with delayed speech. Philadelphia: J. B. Lippincott Co., 1972.

This book is an excellent collection of chapters by a variety of authors. One of the most valuable additions to the book is the extensive bibliography which follows each chapter.

Ryan, J. Language research in the severely subnormal. Teaching and Training, 1971, 9, 1.

Research done to explore possible reasons behind the gap in language ability between severely mentally retarded (SMR) children and nonretarded children of the same MA, language development was studied in 15 mongol and 15 nonmongol SMRs. CAs ranged from 5 to 9 years, MAs from 2.5 to 3.5 years, and IQs from 30 to 49. A control group were matched by sex distribution and socioeconomic class. Each child's spontaneous speech while playing with various toys was tape recorded in 3 separate half-hour sessions. Picture vocabulary for everyday objects was assessed in both naming and a pointing test. The 3 groups show no difference in picture vocabulary scores, but when it comes to understanding the SMRs do worse than the normals. Thus while the 3 groups were equal in their knowledge of single words for objects, they differed greatly in their ability to string words together into sentences.

Schiefelbusch, R., Copeland, R. H., & Smith, J. O. Language and mental retardation. New York: Holt, Rinehart and Winston, Inc., 1967.

A book of conceptual considerations -- contains a valuable list of references at the end of each chapter.

Schiefelbusch, R. (Ed.), Language of the mentally retarded. Baltimore, Md.: University Park Press, 1972.

A reporting of recent research by the researchers; the book includes the questions and answers asked at the symposium and provides a breadth of information for the reader.

Stark, Rosenbaum, Schwartz, & Wisan. The nonverbal child: Some Clinical guidelines. Journal of Speech and Hearing Disorders, 1973, Vol. 38, 59-72.

This article describes some principles and procedures related to language training for nonverbal children. Reinforcement theory is discussed. Emphasis is on the application of an experimental approach to the modification of language behavior. The role of recent research in language acquisition as well as the relationship of the language training to the social environment is discussed. In this article the authors have tried to highlight some of the problems, procedures, and new directions that must be taken to establish an appropriate language behavior in a communicative context, resulting from a systematic and empirically based program.

Sullivan, J. P., & Batarseh, G. J. Educational therapy with the severely retarded. The Training School Bulletin, 1973, 70, 1, 5-9.

The article brings up the fact of how severely retarded youngsters have always been relegated to custodial care, their mentality viewed as too low to grasp even the rudiments of everyday living. It goes on to discuss possible behavior control methods, attention spans and retainment, gross and fine motor training, etc. Included also is the attempt at language development. Perception by visual recognition of names with pictures was given as an example. This

method can be adopted to meet every right to education classroom, however -- for example, merely associating the word "Bobby" with the image in the mirror. Also mentioned was the auditory unit of communication. Here, for example, identification of an alarm clock or other object can be sought by a touch-sound method. The "P" level of the Peabody Kit can initiate matching of sounds to stimuli and cause verbal responses to sound identification. Also mentioned was simple motor imitation as a pre-requisite to language for even more severely handicapped children.

Talkington, L. W., Hall, S. M., & Altman, R. Use of peer modeling procedures with severely retarded subjects on a basic communication response skill. The Training School Bulletin, 1973, 69, 4, 45-49.

The article basically entails the establishment that the influence of modeling procedures has on the behavior of others. Work of several investigators dealing with speech training and verbal production has touched on a modeling technique in prompting vocabulary development in these children -- imitating a word. This parroting is then given social reinforcement. The verbal model-imitation-reinforcement cycle results in development of language skills. A study was conducted showing this modeling procedure with severely retarded children on a simple training task. Language development, per se, was not attempted, but the more basic receptive communication tasks of responding to verbal cues, etc., were indicated as feasible. Results from measuring the number of responses to commands and pairing these responses with the social reinforcement was done.

United States Department of Health, Education, & Welfare. Social Rehabilitation Service. Children's Bureau. Washington, D. C., 1969, 52-1964, 2-4.

Rather than concentration on actual speech parts of the pamphlet, justifiable findings for right to education children can also be found. For example, the use of communication through any form of language includes use of the parts of our bodies we use to breathe, swallow, cough. Nerves and muscles grow with children and thus different sounds can be produced. Communication itself begins when a baby cries. His cries are of hunger, pain, anger, etc.; these tones are communication. Hearing is communication through which a child can respond with an eye blink or other activity.

The role of nonprofessionals persons in teaching language skills to mentally retarded children. Exceptional Children, 1970, 37.

The study reviewed a two-year research project in which two former psychiatric aides were trained to serve as language developmentalists for small groups of institutionalized severely retarded children. Forty children participating in the program were compared with a matched control group on variable IQ, language, age, and social quotient. Children attending language classes met daily

for approximately one hour. They were taught from the Peabody Language Development Kits and a series of lessons developed during the project. Results showed significantly greater language scores made by the language training groups. IQ scores increases were equivocal, but again faired those children attending language classes.

Winitz, H. Problem solving and the delaying of speech as strategies in the teaching of language. ASHA, October 1973, 503-506.

A unique concept for most "programmers" -- the importance of "reinforcing" the natural language to bring about improvement in grammatical structure.